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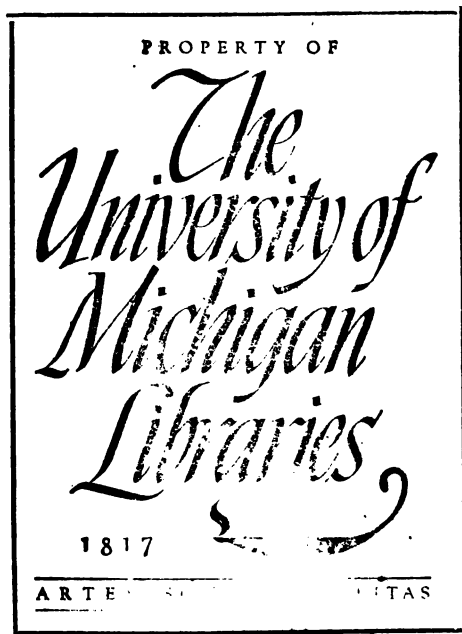
LIGHTHOUSES



OF THE WORLD.

4/-

Wm. C. Mc Gregor



My dear

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Ship. Blackadder

Capt Grassam

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Elford

Ernest

Englewood

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Front + when

TRB 17

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The
EDDYSTONE LIGHTHOUSE

Completed 1759.

To be replaced by a new building.

A

DESCRIPTION AND LIST
OF THE
LIGHTHOUSES
OF THE WORLD.

1879.



NINETEENTH EDITION.

BY ALEXANDER GEORGE FINDLAY, F.R.G.S.
Honorary Member of the Società Geografica Italiana.

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P R E F A C E.

THE Introductory portion of this Book is the substance of two Papers by the Author, read before the Society of Arts on December 15, 1847, and March 3, 1858; which have been published in the Society's Transactions and Journal. It was thought that, by drawing the Sailor's attention to the methods by which the Lights are produced, it would be adding much to their utility, and prove interesting to many.

The varied features of the beautiful Systems in operation are necessarily, from the nature of this Work, very briefly adverted to; and many important topics have not been touched upon for the same reason. The excellent works of ROBERT ALAN, and THOMAS STEVENSON, will furnish the reader with a fund of varied information, and will supply all deficiencies in this, should a further insight be desired.

Besides these works, and others of earlier date, quoted herein, the bulky Reports of the Select Committees of the House of Commons, of 1822, 1834, and 1845, and that of the Royal Commission published in the present year, if they have not advanced the subject of their inquiry, have collected and recorded a vast mass of detail bearing upon almost every relation of the Lighthouse System. Besides these, the Report of the United States' Lighthouse Board, in 1852, the works of Fresnel, and other Engineers of the French Commission, will give an excellent account of the condition and requirements of Lighthouses.

The lists of the Lights which follow have been re-arranged from those published by the Admiralty, which, under the careful superintendence of Commander EDWARD DUNSTON, R.N., have attained a completeness approaching perfection.

In order that this Work may preserve its utility for several years, by giving the latest information, a SUPPLEMENT, containing the additions and changes that have occurred during the previous year, will be annually forwarded on application as directed.

A. G. F.

London, July 1, 1861.

After the TWELFTH EDITION this book was remodelled, although the information is given on the same plan, and arranged in the same manner, as in those preceding it. But it was thought that the utility of the book might be, in some degree, increased as a work of reference, by giving more particulars of the character and uses of each light.

In the Introductory description of Lighthouses and their illuminating apparatus, those recent improvements, and many other particulars which have been introduced in process of time, will be found alluded to.

London, January 1, 1879.

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PHAROLOGY:

OR,

A DESCRIPTION OF LIGHTHOUSES,

AND THEIR ILLUMINATION.

CHAPTER I.

EARLY HISTORY OF LIGHTHOUSES.

To bring before the sailor's notice the many beautiful adaptations of refined science in operation in Lighthouses,—to explain their principles, and to enable him to distinguish one description of light from another, through a knowledge of its construction, is the object of the present Introduction. These subjects, though of great interest, were but little noticed till within a few years, although they have been brought nearly to the present perfection for a long period.

Amid the wonderful progress which has characterized the last quarter of a century, the Lighthouse system has been one of the foremost. Wherever civilization and commerce have spread, there has the engineer marked its advance by these evidences of his skill; and it seems more than probable that, in the course of a very few years, all the prominent points of the world, interesting to the navigator, wherever his commercial pursuits lead him, will be indicated by day and night by these guardian monitors; while the whole West of Europe is now so well lighted as to very nearly approach perfection. Whether Lighthouses, as now understood, were used in the early periods of history is almost more than doubtful, although there are many allusions in the mystical writings of the ancients to such existing, and conjectures have been formed that Homer has mentioned them. Vague hypothesis has also made the single-eyed Cyclopes into Lighthouses; or even, in a figurative manner, Lighthouses themselves. It is more than probable that the prominent headlands of the Mediterranean were marked, in the very early ages, by beacon lights, to guide the coasting and timid voyagers of these distant ages. It has also been surmised, but without much reason, that the famous Colossus of Rhodes, erected about 300 B.C., was also used as a signal light.

Leaving these dark conjectures, we arrive at a certainty in the history of the famous Pharos of Alexandria, one of the seven wonders of the world. It served as a guide to the ancient mariners during the period of 1,600 years, and its remains are still to be recognized. Pliny says, in his *Natural History*, that it was built by Sostratus of Cnidus, by command of one of the Ptolemies, about 285 B.C. The cost of it was 800 talents (£243 15s.), or £195,000 English. It was square, of white stone, consisting of many storeys, and diminishing upwards. Its height, according to the authority of the *Geographia Nubiensis*, was 100 statures of man, or 300 cubits (equal to 20,480 inches), equal to 512 English feet. In the upper chambers were windows looking seawards, and in these chambers torches or fires were burned to guide vessels into the harbour of Alexandria, and we are told by Josephus that these fires were visible at the distance of 300 stadia (or 29½ geographic miles).

This general description is applicable to nearly all Lighthouses down to the year 1811 or 1812. Its name was taken from the little Island of Pharos, on which it was erected, and hence it has been applied to Lighthouses generally, while the term *Pharology* was first introduced by the

Lighthouses.

late Mr. Purdy to express our modern system. Other Light-towers existed at Ostia, Ravenna, Apamea, and other places, as mentioned by Pliny, Suetonius, and Stephanus Byzantinus.

During the spread of the Roman power, this mighty nation planted these evidences of their nautical skill in their conquered countries. The Lighthouse at Coruna, north-west of Spain, is perhaps the oldest existing tower now used as such. It is believed to have been erected in the reign of Trajan. It was re-established as a Lighthouse in 1634.

In England we have an evidence of the Roman colonization in the Pharos which stands adjoining the ancient church on the highest part of Dover Castle, built prior to A.D. 53. A similar tower (now destroyed) existed on the opposite heights, and was called, from its hardness, "The Devil's Drop of Mortar;" another occupied the height of Boulogne, on the French side. There, perhaps, may have been a Roman Pharos on Flamborough Head, and another one on the coast of Flintshire. The known existence of these and others, and the inferred use of others in our own country, testify that these phari were among the many marks of the high civilization of those early days.

In the mediæval period there are many Lighthouses of which we have some notices, as well as some which still are used as such. They were also frequently, perhaps more generally, a portion of other buildings. Thus, on an angle of the tower of the little church which crowns St. Michael's Mount, in Cornwall, are the remains of a stone lantern, perhaps nearly 500 years old, which is now known as the famous St. Michael's Chair. The Light at St. Elmo's Castle, Malta, has been shown since 1551. The old Skaw Lighthouse, on the North point of Denmark, still standing as signal tower, dates from 1564. The oldest lights now existing on the same sites in Great Britain are those of Lowestoft, since 1609; Winterton and Dungeness, 1615; the North and South Forelands and Orfordness, 1634; the Isle of May, 1635; Portland, Harwich, Flamborough, &c., all in the 17th century; and several others soon after these dates.

All these structures, however, do not differ in their principles from ordinary buildings on land, and were constructed only to show by night the uncertain illumination of a wood or coal fire, or other imperfect mode of lighting. Modern science has replaced all these methods by a very different order of building and apparatus; so that, although the brief description of lights in ancient times, given above, is interesting to the historian, it is only within almost the last century that the true requirements of these monitors have been recognized. As a building, the first structure, as a purely nautical work, was the Cordouan Tower, in the Bay of Biscay; and the next the Eddystone Lighthouse: with these commences the history of modern Lighthouses.

CHAPTER II.

LIGHTHOUSES AND LIGHTVESSELS.

The famous Cordouan Tower at the mouth of the Gironde, in the Bay of Biscay, is a wonderful monument of skill. This elegant structure, the work of Louis de Foix, was completed in 1611, in the reign of the great Henri IV. of France, and was twenty-six years in building. It is minutely described by Belidor, in his "Architecture Hydraulique." It was 197 feet high, and consisted of successive galleries, enriched with pilasters and friezes. Round the base is a circular building, 134 feet in diameter, in which are the light-keepers' apartments, and which also forms a sort of outwork to break the force of the waves against the main building. The tower itself contains a chapel and numerous apartments, and is ascended by a spiral staircase. It has been modified and adapted to the modern system of lighting; and, after a lapse of more than 250 years, it is considered the finest Lighthouse in the world.

The Eddystone Rock, off Plymouth, has attracted the attention of the public more, perhaps, than any other of our Lighthouse sites; not so much on account of its importance, but as forming an era in the construction of Lighthouses. The first Eddystone Lighthouse was built of wood, 80 feet high to the top of the vane, from Mr. Winstanley's designs, 1696-8. The light

was first shown in November in the latter year, but it was soon found that the sea rose, so as "to bury the lantern under the water," although at the elevation of 60 feet above the rock. It was accordingly raised to 100 feet. In November, 1703, the tower requiring some repairs, Mr. Winstanley went to the Lighthouse to superintend them; but the storm on the 26th of that month carried away the whole erection, and every soul perished. The wreck of the *Winchelsea*, man-of-war, soon after occurred, as if to point out the necessity of a light; but the Trinity House could not obtain the sanction of the Government to commence until July, 1706, when a new timber erection was begun by Mr. John Rudyerd. It was subsequently destroyed by fire in 1755. This tower was circular, and 92 feet in height. The tower which exists here at present was erected by Mr. Smeaton, who has given an admirable description of it. The masonry was 76 feet 6 inches, and the top of the lantern 93 feet above the foundation. This noble erection, completed in 1759, stands a monument of fame to its constructor, and a lasting evidence of the correctness of the principles on which it is built. It will be self-evident that the site of this, and similar erections, calls for extraordinary skill and solidity in their construction. They are, therefore, to be viewed as works *sui generis*, and must not be classed with similar buildings on land, removed from the tremendous force of the waves.

Smeaton's description has been so often referred to, that it is scarcely necessary to quote from it here. The various courses are so dovetailed into each other, and the whole secured together, that the tower is really almost as if cut out of a solid block. The immense difficulties which had to be overcome, from the first landing on the rock, on April 5, 1756, to the laying of the first stone, June 12, 1757, and the last, on August 24, 1759, render Smeaton's book one of the most interesting ever written.

The next Lighthouse in our country, of a similar nature, is the equally famous Bell Rock Lighthouse; whose constructor, the late Mr. Robert Stevenson, has also given us a most valuable account of the difficulties to be overcome, and the progress of the works, between its commencement, in August, 1807, and its completion, in October, 1810. It was first illuminated in February, 1811. The tower is 100 feet high, and cost £80,000.

A later, and the most noble erection of this kind, is that on the Skerryvore Rock, off the West coast of Scotland. This, from the designs of Mr. Alan Stevenson, the son of the engineer of the Bell Rock, and the talented engineer to the Scottish Lighthouse Board, cost in its erection, with the harbour for the tender and other necessities, £87,000, and was first illuminated in 1844.

Another grand Lighthouse of this nature, and also one of the most important in the British list, is that on the Bishop Rock, off Scilly, 145 feet high, built by the late Mr. James Walker, under the superintendence of Mr. H. Douglass, at an expense of £36,500.

The Lighthouse at Carlingford, on the East coast of Ireland, the foundation of which is 12 feet below high water, is an analogous structure, 111 feet in height, though not in such an exposed situation, from the designs of Mr. George Halpin, in 1830.

Another noble and ornamental Lighthouse is on the West coast of France, on the Héhaux (or Héaux) de Brehat. It is nearly as high as the Skerryvore, and is deserving of all admiration.

The Wolf Rock Lighthouse, off the Land's End, Cornwall, is the latest great work of the Trinity House, and both in its structure and its illumination it combines all the refined improvements which have been effected through the talent of its engineer, Mr. James Nicholas Douglass. A survey was made in 1861, and the foundation commenced in March, 1862. In the first season only 83 hours of work could be obtained; and between that and its completion, on July 19, 1869, there were in the eight working seasons 296 landings on the rock, and the time occupied was equal to about 101 working days of 10 hours each. The cost was only £62,726.

The great distinction between the later towers, erected by the Messrs. Douglass and their predecessors, is that the stones of each course are dovetailed together laterally and vertically, so that the use of metal or wooden pins is needless. This method was first used at the Hanois Rock, Guernsey. On the upper face, and at one end of each block, is a dovetailed projection; and on the under face, and at the other end, is a dove-tailed indentation. The upper and under dovetails are made just to fall into each other, and when the hydraulic cement is placed on the surface, it so locks the dovetailing that the stones cannot be separated without breaking. Thus, when this cement is set and hardened, the whole of the base is literally one solid mass of granite. The lower courses for the first 39 feet of the Wolf Rock Lighthouse have fillets on their outer edges, into which the upper course is stepped, and this prevents the action of the waves from penetrating the joint. Of the light apparatus we shall speak presently.

It is as difficult to estimate the nautical importance of these triumphs of engineering skill, as it is to calculate the wonderful force of waves that they have to bear against. Mr. Thomas Stevenson, another of that eminent family of Lighthouse engineers, constructed an apparatus, like a railway buffer, that self-registered the force of the waves that struck it, which has been applied to this purpose. In the Atlantic, according to observations made at the Skerryvore Rocks, the average result for five of the summer months, in 1843-4, was 611 lbs. per square foot. The average result for the six winter months of the same years was 2,086 lbs. per square foot, or three times as great as in the summer months. The greatest force registered was on the 29th of March, 1845, during a westerly gale, when a pressure of 6,083 lbs. per square foot was exerted. The next highest was 5,323 lbs.

In the North Sea, at the Bell Rock Lighthouse, the greatest result obtained was 3,013 lbs. per square foot. This lesser force is to be attributed to the narrow space in which the waves have to travel in the North Sea, compared with the roll of the Atlantic. It must, however, be remarked, that it is almost impossible to receive the force unimpaired, as the waves are more or less broken by hidden rocks or shoal ground before they reach the instruments.

Even this tremendous force seems to be far less than that encountered at the Bishop Rock, probably the most exposed Lighthouse in the world. On January 30, 1860, a storm wave shook this tower, and tore away the bell, weighing 3 cwt., from its support at the top of the tower, more than 100 feet above the sea. Mr. Stevenson also has related some extraordinary circumstances of the force of waves at the Shetlands, which demonstrate that their power, if opposed, is almost irresistible. Therefore, if these sea-beaten towers were not, at least, equal in weight to a solid block of granite of 60 or more feet in height, they would not be able to withstand the waves.

The most obvious means to avoid this enormous amount of hydrodynamic force is to reduce the extent exposed to it to the smallest possible limits, so as to offer the least possible resistance. Iron columns have been suggested and used for this purpose. Wood has also been used, as in the Smalls Lighthouse, off Pembrokeshire; but as it is liable to many sources of decay, and particularly to the ravages of the *teredo navalis* when under water, it is not adapted for such structures.

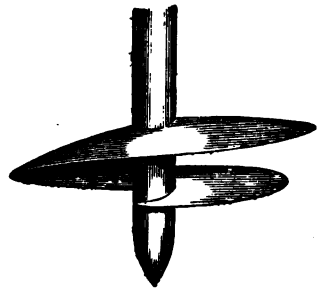
Having stated these difficulties, the description of some of the means employed to overcome them will be better understood. The first to be noticed is the *screw pile* of Mr. Alexander Mitchell, C.E., of Belfast. This principle was first employed in the construction of the foundation of the Maplin Lighthouse, on the North side of the mouth of the Thames, which now exhibits a red light. This was commenced in 1838, and is as firm now as when first erected. It stands on the outer edge of the Maplin Sand, which consists of sand at the surface, and afterwards of sand and mud, exceedingly soft and penetrable, and therefore the erection of a Lighthouse upon such a foundation must be considered as a great achievement.

The principle of the screw-pile Lighthouse is having a series of piles, nine in number, eight in the angles of an octagon, and one in the centre. These piles consist of a shaft of hammered iron, 5 or 6 inches in diameter, having a single turn of the flange of a screw 4 feet in diameter. This pile is screwed with great facility into the sand to the depth of 22 feet, and it was calculated that each of them would bear a weight of 64 tons. These nine piles were fixed in nine consecutive days in the summer of 1838, and upon this foundation of Mr. Mitchell's the light-room was erected, under the direction of Mr. Walker, the engineer to the Trinity Board.

Mr. Robert Stevenson proposed, in 1800, a structure similar to this, for the Bell Rock Lighthouse. It was intended to affix the foundation to the rocks, and that the iron shafts should support several storeys; whereas the Maplin and other Lighthouses have but a single storey.

The screw-pile system has also been adopted for standing Beacons. As far as experience goes, these Lighthouses answer all the purposes required of them, as regards stability, by offering the smallest possible surface to the force of the waves.

These pile Lighthouses have hitherto been placed in the less exposed situations, such as the



Extremity of Mr. Alex. Mitchell's
Screw Pile.

Thames Mouth, Morecambe Bay, Belfast, Cork, &c., and have answered all their requirements.



The Maplin Lighthouse, erected by Mr. Walker, upon Mitchell's screw-pile foundation.

The proposal of Mr. Stevenson for the Bell Rock, before alluded to, was attempted on the Bishop Rock, and the structure was completed to the base of the lantern, when it disappeared in the course of a stormy night in January, 1850. The same disaster befel a similar structure on the Minot's Ledge, Boston Bay, U.S. These misfortunes have stopped any further extension of this principle, although it is of very great importance to secure a foundation on a treacherous bed in an exposed situation. A modification of this pile principle has been used more recently in structures built on difficult foundations at the mouth of the River Ebro, coast of Spain, and the *Dædalus* and *Ashrafi* Lighthouses, in the Red Sea. These consist of iron frameworks strongly braced together, and are of considerable elevation.

Many other plans have been suggested, among which the pneumatic pile of Dr. Potts deserves notice.

This beautiful adaptation of atmospheric pressure has been applied to the erection of several Beacons in the vicinity of the mouth of the Thames. The first experiment was

upon the Goodwin Sands, on July 16, 1845, and an iron tube of 2 feet 6 inches diameter was driven into the sand to a depth of 22 feet in two or three hours. A gentleman, present at the experiment, which was made by the Trinity Brethren, said, that the facility with which this large tube was made to descend could be compared to nothing better than shutting up a telescope. The method of operation is this:—One of the tubes being placed perpendicularly, an air-tight cap is fixed to the upper end. The cap communicates with a powerful air-pump, by means of which the air is exhausted from the tube, drawing up the sand or shingle with the water which ascends, and the tube immediately descends from the effects of outward atmospheric pressure. The practicability of the scheme being proved, several Beacons, as before stated, were erected as on the Buxey, the Shinglos, the Girdler, the Margate, and other sands lying in the mouth of the Thames.

Another plan has been carried into effect, at the Point of Air Lighthouse, at the entrance of the River Dee, near Chester. This, which is similar in superstructure to the Maplin Lighthouse, consists of nine hollow iron cylinders, 3 feet 9 inches in diameter, sunk 12 feet into the sand by the aid of an instrument known to well sinkers as the "Miser," which extracts the sand contained in the cylinder. In these the bases of the piles are inserted, and then filled with concrete. But this is erected above low water mark.

Another adaptation of iron is the iron Lighthouse, designed by the late Mr. Gordon. It would seem somewhat singular that iron should not have been employed in this form before, when we consider the multifarious variety of purposes to which it is now applied. A cast-iron Lighthouse was mentioned by Mr. Rennie, in 1806, for the Bell Rock, and also, as previously stated, referring to Mitchell's screw-piles, by Mr. Robert Stevenson, in 1800. Mr. Gordon's Lighthouses consist of wrought-iron plates riveted together in the usual way, and he proposed that all Lighthouses should be built to a uniform scale, so that any plate or part of the structure should be adapted for any other Lighthouse. The first tower of this construction was placed on the eastern end of Jamaica, called Morant Point.

Another is on the great Bermuda Island. This noble tower is erected on the centre of the remarkable group of islands, the scene of Shakespere's *Tempest*, and the focus of the Atlantic hurricanes. The Light-tower is 105 feet 9 inches high, formed with iron plates, the entire weight of which is nearly 100 tons. It has seven storeys, and the lower portion is filled in with concrete, to the height of 22 feet, to give it stability. Nearly every portion of the edifice is of iron, and

the erection of the tower was completed in ten months, finished October 9, 1845, under the control of Mr. George Grove.

Another example of iron towers is that erected by the French Government at the entrance of Port Noumea, New Caledonia, in the South Pacific. It is a very fine building, 147 feet high, and formed a new conspicuous object in the great Paris Exhibition of 1867. A similar tower stands on the Roches Douvres, in the English Channel.

One important point is the colour of Lighthouses. In many instances this has not been sufficiently attended to; and some of the noble Scotch towers, left of the natural colour of the stone, too much resemble the grey background. When it shows against the land, white, of course, is the best; and if against the sky, a dark colour is preferable. *Red* is sometimes used, as at Dungeness, &c.; and the extension of the use of coloured stripes and bands is recommended. This has been found particularly serviceable for day distinction in the British American lights, where the snow lies much longer against the field fences at right angles to the coast, and has precisely the same appearance at a distance as a white tower.

There is one difficulty in the use of coloured bands, and that is, during hazy weather, the appearance of the tower is frequently that of a ship under sail, the bright stripes being like the sails; this requires caution. The famous Eddystone has been painted in this way to distinguish it from the Bishop Rock.

The buildings we have been describing, commencing with those of ordinary land erections, and terminating with such towers as the Bishop Rock, have been extended as far as human skill and power can probably be exercised. Still it is necessary, not only to mark a danger, or indicate safety, but to warn ships from the approach to a shoal or reef, or to show a channel far away from land.

The numerous light-ships which have been established by Great Britain have greatly fulfilled this requirement. Our country possesses fifty-four such vessels, of which seven belong to Ireland and two to Scotland. Other countries have but very few light-ships. The United States has seventeen; formerly there were many more on the United States' coast, which have since been replaced by pile Lighthouses.

It is manifest that a lightvessel can perform its office but imperfectly, compared with the stability ensured in a fixed Lighthouse. Its floating character prevents the use of that refined and enlarged apparatus which is the characteristic of a Shore Lighthouse. In addition to this, the establishment of a lightvessel is very much more expensive. The average cost of the English lightships is £3,600; of the Irish, £6,200. Those of the United States (the best), the Nantucket New South Shoals, £4,375.

The cost of maintenance is much greater than that of a Lighthouse establishment. This is manifest from the difference of condition. Three men are sufficient to a rock Lighthouse, eleven are required to man a lightship; consequently, while the annual cost of a first-class Lighthouse is from £265 to £340; in Scotland, £380; Ireland, £405 to £485; and in France, from £320 to £415; that of the Lightships amounts to £1,103, £1,464, and £1,320 per annum for England, Liverpool, and Ireland, respectively, and £1,354 for the United States' Nantucket vessel. These are strong arguments in favour of stationary buildings.

The efficiency of a Floating Light depends on the attention paid to the points in reference to the quality of Lighthouses, with one very important addition, namely, that it should remain on its station in all weathers.

"The best proof that the lights are efficient in the last particular is to be found in the statements of the Lighthouse authorities, which are fully confirmed by the evidence of mariners. The Lightvessels very seldom go adrift, and there is no instance on record in which the crew have voluntarily run from their stations in bad weather. When they have been driven from their moorings, the vessels have always been replaced in a very short time, and none have ever been wrecked. The mariners' evidence on this point is valuable, because the rare instances in which Lightvessels have been off their stations are repeatedly mentioned by independent witnesses as remarkable events. It does not appear that the lights have ever been accidentally extinguished." But, unfortunately, they are sometimes run into by passing ships.

Much has to be learned about the best form for resisting the force of winds and waves when the vessel is always at anchor. The shape of the hull now varies considerably. Some are longer than others. The part of the vessel to which the moorings are attached, and the points where the chains enter, are different. The Irish vessels are generally longer and sharper than those in England, and set an after-sail when its use enables them to ride more easily. The

testimony of the men on board has been in favour of considerable length, fine entrance, and a low point for attaching the moorings.

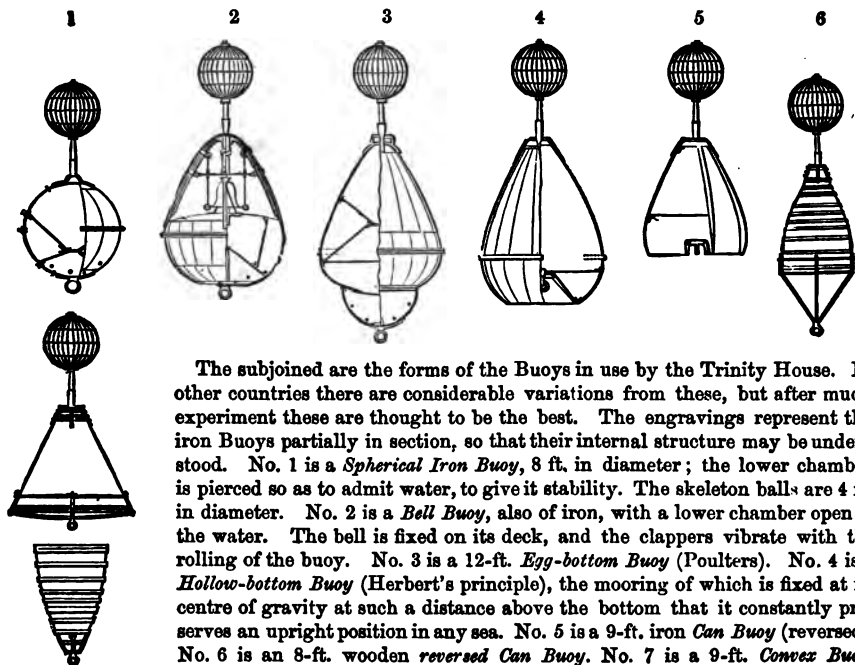
The Trinity House Lightvessels are painted red. In Ireland they are black with a white streak. At Liverpool, two are red and one black; and they are all distinguished by balls hoisted at the mastheads, and by other signals, and some have their names painted on their sides. Black and red seem to be the colours which contrast best with the colour of the sea, and they are, in fact, best seen.

The United States' sea Lightships, where they have been constructed on the improved models of the European floats, since the establishment of the Lighthouse Board in 1852, are painted either cream-colour or white.

It is a remarkable fact, that the Lightships lying in very exposed situations, as that at the Seven Stones, near Scilly, and the Coningbeg, ride very much easier than those in shallow though sheltered waters, as at the Spurn, off the Humber, the Owers, the Galloper, or the Arklow. This is owing to the great scope of heavy cable which is out in the one case, acting as preventive to her pitching heavily while she crosses the sea; and short cable renders a Lightship, in some positions, one of the most unpleasant situations in the world. In the shoal water, when the wind is strong, the vessels sometimes ride broadside to the tide and sea. Where the swell is much larger, as in the open ocean, the tides are not so strong. The efficiency of a Lightship is thus impaired by her want of stability at her moorings.

A few words may be here added upon *Beacons* and *Buoys*, as accessories to our present subject. In some cases Beacons approach the excellence and costliness of standing Lighthouses. Thus the dangerous Wolf Rock and Rundlestone were marked with stone Beacons, the first of which cost nearly £12,000, and immense labour; this has been superseded by the Lighthouse. There are 261 structures of some magnitude erected as Beacons under the public authorities of our country; and it is thought that our system, although capable of some improvement, is generally superior to that of foreign nations.

BUOYS USED BY THE CORPORATION OF TRINITY HOUSE.



7 and 8

The subjoined are the forms of the Buoys in use by the Trinity House. In other countries there are considerable variations from these, but after much experiment these are thought to be the best. The engravings represent the iron Buoys partially in section, so that their internal structure may be understood. No. 1 is a *Spherical Iron Buoy*, 8 ft. in diameter; the lower chamber is pierced so as to admit water, to give it stability. The skeleton balls are 4 ft. in diameter. No. 2 is a *Bell Buoy*, also of iron, with a lower chamber open to the water. The bell is fixed on its deck, and the clappers vibrate with the rolling of the buoy. No. 3 is a 12-ft. *Egg-bottom Buoy* (Poulter's). No. 4 is a *Hollow-bottom Buoy* (Herbert's principle), the mooring of which is fixed at its centre of gravity at such a distance above the bottom that it constantly preserves an upright position in any sea. No. 5 is a 9-ft. iron *Can Buoy* (reversed). No. 6 is an 8-ft. wooden *reversed Can Buoy*. No. 7 is a 9-ft. *Convex Buoy*. No. 8 is an ordinary 8-ft. wooden *Can Buoy*.

DESCRIPTION OF LIGHTHOUSES.

In the form and character of Buoys there has been very great improvement of late years, especially since the employment of iron in their construction, as in the case of ship building. In Great Britain and Ireland there are about 1,100 Buoys in position, excluding wreck, warping, and many others of minor importance; about one-half of which are under the public authorities. They generally keep their positions excellently, the chief accident occurring through being run down.

The conical form and dark colours (black or red) seem to be the most useful. The cost of a Buoy varies from £27 to £36 for the ordinary can, up to £130 and £197 for the first class conical Buoys.

The *System of Buoyage* adopted by the Trinity House is as follows:—

The side of the Channel is to be considered starboard, or port, with reference to the entrance to any port from seaward.

The entrances of Channels, or turning points, shall be marked by conical Buoys, with or without staff and globe, or triangle, cage, &c.

Single-coloured Can Buoys, either black or red, will mark the starboard side, and Buoys of the same shape and colour, either chequered or vertically striped with white, will mark the port side. Further distinction will be given when required by the use of Conical Buoys, with or without staff and globe, or cage; globes being on the starboard hand, and cages on the port hand.

Where a middle ground exists in a Channel, each end of it will be marked by a Buoy of the colour in use in that Channel, but with annular bands of white, and with or without staff and diamond or triangle, as may be desirable. In case of its being of such extent as to require intermediate Buoys, they will be coloured as if on the sides of a Channel. When required, the outer Buoy will be marked by a staff and diamond, and the inner one by a staff and triangle.

Wrecks will still continue to be marked by green Nun Buoys.

CHAPTER III.

LIGHTHOUSE ILLUMINATION

1.—LIGHTS.

The first Lighthouses, such as the Cordouan and the North Foreland, had originally on their summits open fire-places or chauffers; in that of the former were burnt billets of oak wood, and that of the latter, coal; and this was the only means of indicating their situation during the night. A few words will show how incompletely these must have performed their office. Of course, the time at which a light becomes most serviceable is during tempestuous weather; and a wind, blowing towards the land, causes that dread to mariners—a lee-shore; yet this wind would drive the flames of an open fire away from the direction in which they were most wanted to be seen; thus the bars of the grate were often nearly melting to leeward, while towards the sea the coals remained untouched by fire. There was frequently, however, this advantage in the open fire, that during the fog or rain the glare of the fire was visible by reflection in the atmosphere, though the fire itself could not be seen. Such a feature would be of no advantage in the modern system, as will be hereafter shown.

The North Foreland Lighthouse, between Ramsgate and Margate, will be more familiar to many than other Lighthouses, and will serve as an excellent example of the progress of illumination. This Beacon was instituted for indicating the proximity of the Goodwin Sands. The first intimation we have of its existence is in 1636, in Charles the First's reign, when license was granted to Sir John Meldrum to renew and continue this and the South Foreland Lighthouse for the same purpose. At this time it was merely a large glass lantern on the top of a timber and plaster house, which was burnt in 1683. Towards the end of the same century, the present

tower was partially erected; a strong octagonal structure, having the iron grate, or chauffer, for burning coals. From the difficulty of keeping up a proper flame in windy or rainy weather, about the year 1732 it was covered with a sort of lantern, with large sash windows, and the coal fire was kept alight by means of large bellows, which the attendants blew throughout the night. This was found not to answer, and the reflected glare above mentioned was thought desirable. Accordingly, the lantern was removed, and the fire restored to its original condition. Matters went on thus till 1790, when the tower was raised to its present height of 70 feet, and further improvements made in the lantern, by the introduction of lamps and other apparatus, hereafter to be described.

After some alterations of the Cordouan wood fire, the mariners complained that they could not see the light at the distance of two leagues, as formerly. But Smeaton informs us, that the coal fire of the Spurn Point Lighthouse, at the mouth of the Humber, which was constructed on a good principle for burning, had been seen thirty miles off.

The only exceptions to the fires were the noble Eddystone light, which then used to exhibit a chandelier of twenty-four wax candles, five of which weighed 2 lbs., and the Liverpool Lighthouses, which had oil lamps, with rude reflectors.

The use of coal fires has not been so long abolished as might be imagined. In Britain they were used till 1823. Thus the Isle of May Lighthouse, at the entrance of the Frith of Forth, had a coal fire till 1810; at St. Bees Head, Cumberland, oil was first used in 1823; at the Flat Holm, Bristol Channel, in 1820, &c. They were in operation on the two towers of Nidingen, in the Cattegat, till 1846.

The general use of *good* lights is of very recent date. During early times the modes of lighting were most imperfect; and the rude lamps, with their thick, torch-like wicks, which were the best then attainable, form a ridiculous contrast to the present universal brilliancy required.

Upon the introduction of the Argand lamp, a vast step was advanced towards the perfection of Lighthouses. This advance in artificial light was the greatest previous to the introduction of gas. It was discovered by M. Argand, a citizen of Geneva, about 1780 or 1785. It has remained as he left it, and appears as perfect in principle as can be looked for. Its perfection as an experiment was almost accidental. We are informed by the younger brother of Argand of its accidental discovery. He says, "My brother had long been vainly trying to bring his lamp to bear. A broken-off neck of a flask was lying on the chimney-piece; I happened to reach it over the table, and to place it over the circular flame of the lamp; immediately it rose with brilliancy. My brother started from his seat in ecstasy, rushed upon me with a transport of joy, and embraced me with rapture." Thus was the Argand lamp formed.

On the introduction of this more efficient means of illumination, and the consequent abandonment of the coal fires, Lighthouses assumed a more important position in maritime affairs, and they were accordingly largely increased in number.

The cylindrical-wicked lamp, in its various forms, is the usual mode of lighting employed in Lighthouses. For the reflectors, the wick is nearly an inch in diameter; for the lens lights, a more powerful and complicated lamp is used.

For a first order light, this lamp consisted, in the first instance, of four concentric wicks, of the respective diameters of 0·827, 1·69, 2·52, and 3·39 inches, the smaller apparatus being constructed of three or two concentric wicks; but within these last few years the interior wick has been removed from all the burners, it being thought that a light of superior brightness could be obtained by allowing more air to pass into the flame on the inside, and forcing this air outwards on to it by a metal breaker or button kept below the level of the flame, so as not to interfere with the rays of light emanating from all sides of it. But an undue economy has been forced on the consumption of oil, and the metal button hiding some of the upper rays, it is probable that the efficiency of the light has been impaired, and a portion of it screened from the upper part of the apparatus. The original form of the lamp will therefore be restored.

The oil is made to flow into the burners by various means, as is stated above. Fresnel's invention consisted of a series of four small pumps, worked by clock-work, which forced the oil upwards to the flames. Another mode was by weights acting on a piston; a third by a spring doing the same office—a plan which has since become in universal use in the moderator lamps. Another mode, the pneumatic lamp of Messrs. Wilkins, acted by means of the pressure of air in the reservoir; and another, frequently applied of late, is by placing the reservoir slightly higher than in the lamp, the oil thus flowing freely by its own gravity to the required level.

The fuel used in the English Lighthouses in these excellent lamps up to the year 1846, was the

best sperm oil that could be procured. At that period a change was made throughout the whole of the lamps, by adapting them to the use of colza or refined rape-seed oil, requiring a thicker wick. This oil was in use in the French Lighthouses for some time prior to this, and was procured from the seed of a peculiar species of wild cabbage, known in the North of France under the name of colzat, or colza. This plant is extensively cultivated in Normandy, &c., the chief markets for the oil being Caen, Rouen, Lille, and Courtrai. This refined oil is of a superior character to the sperm oil; it produces a brighter flame, does not cause so much deposition on the wick, consequently will burn longer without trimming; any adulteration in it is much more easily detected than in sperm oil, and it is half the cost. It is an excellent substitute for the oil, which is annually becoming dearer, and more open to being mixed with other and inferior oils. In the Liverpool lights olive oil has been used since 1847—a change effecting a saving of 40 per cent. on the use of sperm oil. Olive oil is also used in the Spanish and Austrian Lighthouses. The United States lights are supplied with sperm oil exclusively. In our colonial Lighthouses other varieties of oil are used, of which one need only be noticed as having been used in the Lighthouses near the Cape of Good Hope. This oil is procured from the tips of the tails of the Cape sheep, and is said to be far superior to any other oil for brilliancy of light; but the quantity consumed, and the expense, are great. It costs 10s. 6d. per gallon, and the first-order light of Cape Agulhas consumed about 730 gallons yearly; 482 gallons of rape-seed oil would be necessary for one year's supply.

One great advantage in the rape-seed oil (which is refined or purified by sulphuric acid) is that it does not thicken, except upon a very great degree of cold, a qualification which places it far above sperm and many other oils for winter use. Indeed, the change is a fortunate one in another respect. The untiring perseverance of the whale-fishers from the neighbourhood of Nantucket has so dispersed and destroyed their prey, that it is almost doubtful if a continuous and sufficient supply could be maintained, except at great prices.

The purity of the fuel, and the perfect combustion effected by the present arrangement of lamps, keep the flames used in the apparatus in their normal condition; but it is necessary to carry off the products of combustion from the confined space of the light-room; for, if they were not disposed of, they would both materially diminish the power of the light, and also be a serious detriment to the health of the attendant light-keeper, whose constant presence in the light-room is strictly required. This is effected by the ventilating tubes devised by Dr. Faraday, with the principles of which most are familiar; they are fitted to all our Lighthouses. A plan, similar in action, but less complete in detail, was promulgated at the commencement of the present century by Dr. Van Marum.

That a light of such intensity will be discovered as will penetrate a fog, may be considered as utterly hopeless. The sun, the great source of light itself, is entirely obscured by a comparatively thin film of vapour; and although we have artificial lights which apparently rival in brilliancy that of the sun, they are quite incapable of being seen to any great distance under such circumstances.

Perhaps it would be as well to notice here the very great distances to which lights have been visible. One of these is recorded in the account of the trigonometrical operations in France, by MM. Biot and Arago. The points to be connected with Campvey, on the Island of Iviza, and a rocky mountain on the continent of Spain, called Desierto de las Palmas. On the former a powerful lamp, with reflectors, was placed. After watching for some months, a supposed minute star was identified as the signal light, and was afterwards easily recognized by the observers. This was a distance of nearly 100 miles. It is not intended by this example to say that a light could become serviceable at such a distance, but that it is possible to cause a light to be seen so far.

All modifications of lamp light sink into utter insignificance when compared with some other lights, produced by chemical means, from which very great expectations were formed, but hitherto with very little prospect of successful introduction. The first we shall mention is the Drummond light, generally known as the oxyhydrous or lime light.

Lieutenant Drummond, the first promulgator of this splendid light, was employed in the grand trigonometrical survey of England, in the course of which it became necessary to connect by observation Leith Hill, in Surrey, with Berkhamstead Tower in Hertfordshire, which were to be seen, but could not be distinguished from each other. The discovery arose from his consideration of Berzelius's experiments with the blow-pipe, as detailed in the "Philosophical Transactions," 1826—1831; and from the intense light produced in these, Lieutenant Drummond was induced

to try a jet of flame from the combined gases, oxygen and hydrogen, on a ball of lime. Many trials of its intensity were made, one of which was in the North of Ireland. A hill in Inishowen, called Slievesnaght, was always enveloped in haze by day, and a Drummond light was placed on it. In the line between it and the observing station was a church tower, much nearer to the latter, and on this an ordinary reflector was placed. The Drummond light, at the distance of 70 miles, was much more elevated than the other, which was 12 miles distant, and thus they appeared nearly on a level. When they were both seen, the Drummond light appeared to be much nearer and brighter than the lamp at 12 miles.

Its enormous power is evident from this, and it has been reckoned equal to 264 Argand lamps; and this is produced from a ball of lime three-eighths of an inch in diameter, and the angle which this minute object would subtend at the distance of 70 miles is only $\frac{1}{18}$ th part of a second.

The difficulties of introducing this light, however desirable, appeared at first to be insuperable. The preservation of an equal intensity of flame is almost impossible, from the rapid diminution of the lime ball by fusion and volatilization, and by its frequently cracking and breaking. It has, also, the most painful effect on the eyes of the attendants, and is most injurious to the sight. The difficulties, however, of maintaining a steady light has been in part overcome. It has not yet been established in Lighthouses.

One great obstacle to the introduction of any light dependant for its intensity on the use of oxygen gas, is the cost of its production and the difficulty of storing the two gases necessary in isolated positions. But even this seems likely to be overcome, as a much cheaper process for procuring oxygen gas has been lately discovered, though not yet brought into ordinary mercantile use.

A proposition for increasing the intensity of the flame of the oil lamp was made by Mr. Gurney, in 1835; this was to impinge upon the flame jets of oxygen gas. This, by increasing the combustion, greatly enhanced the brilliancy of the flame, but it charred the wick.

The method of illumination by gas has been successfully tried for some years, as in the Lighthouse at Hartlepool. The burner here is that of Mr. M'Niel. Gas, as an illuminator for Lighthouses, was proposed, in 1823, by Signor Aldini, of Milan; and, from some experiments and trials made by the Commissioners of Irish lights since 1868, it seems probable that gas may, at some early day, be more generally used in Lighthouses. This question is, in some degree, dependant on another—the substitution of paraffin oil for colza oil—which is in process of discussion and experiment.

Gas possesses several advantages over the oil flame in its manageability and the ready way in which its power can be increased or diminished. It may also be so economised, that the appearance of a revolving light can be obtained by merely turning on and shutting off the gas at stated intervals, thus greatly economising the expenditure of the flame. This has been done at Troon Harbour, West Coast of Scotland, for many years. An intermittent light, 40 seconds bright, and 20 seconds eclipsed, is there shown, by a simple means, which causes a saving of one-third in the amount of gas expended.

The power of the flame from ordinary gas will not compare favourably with that from the oil lamp; but Mr. John R. Wigham has introduced a new form of burner, which he calls the crocus-burner, which was very successfully employed in the Howth Baily Lighthouse, Dublin Bay; and the gas used was of very superior illuminating power, made from Boghead Cannel coal. The cost, as compared with oil, did not vary very greatly, as shown by the rigid investigations made by Professor Tyndall in 1869-70; but, as before said, the ready means which are always at hand of increasing the power of the flame in fogs or rains is of immense advantage. For Mr. Wigham's burner is made with 28, 48, 68, or 108 jets, all or any of which powers can be used as desired. As Professor Tyndall has suggested, this power of control might modify a great variety of our Lighthouse apparatus, by making the fixed light lens serve the purpose of a revolving light, or be an economy in the revolving lenses, by shutting off the flame during a portion of their revolution. And Mr. Wigham has proposed a new appearance of a light, by means of the revolving annular lens; and by extinguishing and re-igniting the gas in rapid succession, a well-marked flashing light, of a novel character, is produced. This subject being still under consideration, it will be needless to pursue it further here.

The next source of light we shall notice is that from petroleum, or mineral oil. Since the discovery, by Mr. James Young, of a method of obtaining paraffin from the Torbane Hill coal shale, a great revolution has been effected in domestic illumination almost throughout the world. But in the earlier days of its manufacture and use, there was much uncertainty as to its qualities,

and some amount of danger at times, from its varying degree of inflammability. Some of these difficulties have been overcome; and from numerous experiments made at the Trinity House before 1868, the authorities then concluded that no principles were involved in the construction of lamps for combustion of paraffin oil for Lighthouse purposes other than those already in use in other lamps for burning colza as well as paraffin oils. It was, and is, an admitted principle, that the constant level of mineral oil should be below the top of the burner; that of colza, which is less volatile, being just above the top of the burner, so as to give the overflow required in the latter for insuring perfect combustion. Beyond this necessary adjustment, and bringing the edges of the wick tubes a little closer together, as no space for overflow is necessary, no alteration has been found requisite in the large first-order lamp. Some experiments were conducted at the Trinity House in 1871, under the control of Professor Tyndall, as to the best form of lamp and the quality of paraffin best adapted for Lighthouse purposes. This latter is a very essential portion of a difficult problem; because paraffin, burning usually at a very low temperature, any minute fluctuations in the draught or currents of air, which would be difficult to control in the usually exposed position of a Lighthouse, will greatly affect the power and brilliancy of the flame. Mr. James N. Douglass, so well known for his talent as an engineer, has so adapted the Trinity House Lighthouse lamps to the burning of paraffin, that they have shown quite the maximum effect which has yet been produced. Captain H. H. Doty has also designed, or rather converted, this form of lamp to the same purpose, with excellent effect; but, owing to the difficulties hitherto encountered, it is not considered that the best form has been entirely obtained. One very important point awaits the satisfactory solution of this problem, and that is the great reduction in cost, which may not be much more than one-half of that required for colza oil to produce an equal intensity of light. The petroleum light has been placed in several of the French Lighthouses, in the new and splendid light apparatus at Flamborough Head, and at some other stations in Scotland and England.

It will not be necessary to describe several other lights which have been proposed, such as the oxy-hydrogen light, from zircon, or the burning of magnesium, either in the form of wire, or powder, &c., which produce excellent illuminating powers, but which are found unsuitable for Lighthouse purposes.

The ELECTRIC LIGHT is the most wonderful of all the means now employed in Lighthouses, whether it is viewed as the result of the most exalted science, or of the consummate skill which has utilized this mysterious agent. Naturally, this very complicated question resolves itself into two distinct portions—the means employed to produce the power, and the apparatus for utilizing it.

In the outset, the ordinary galvanic battery was used as the producing agent; but, from the great force required, and the great number of elements, or cells, necessary, it was found to be almost impossible to maintain it in an equable condition. The action of the acid on the two metals rapidly decreases, and there is great difficulty in replacing it without interruption. The lamp of Messrs. Staité and Petrie was one of the first applications of this, in 1848, but its clock-work action was unequal to the difficulties of controlling an uncertain and varying electric current.

It is to the talent and assiduity of Mr. T. H. Holmes that the solution of the problem is owing, and he makes use of *magneto-electricity* as the agent for producing the light.

In the year 1831, it was discovered by Faraday, that when a piece of soft iron, surrounded by a metallic wire, was passed by the poles of a magnet, an electric current was produced in the wire, which could be exalted so as to give a spark.

It would be exceedingly difficult to explain verbally the admirable machine which is now used. Briefly it is this, a series of three or more concentric rings of very powerful magnets are arranged on a frame, 9 or 10 feet in diameter. Between these rings of magnets a corresponding series of electro-magnets, which are formed of soft iron cores, around which the copper wire helices are wound, are made to revolve, being set in motion by a steam-engine. The brass wheels, carrying these bobbins or helices, make 110 revolutions per minute, and at every revolution about 85 lbs. of soft iron are magnetised, by each of the electro-magnets taking up a portion of the power from each of the permanent magnets as it passes close-to, but, of course, without touching them. The magnetic state of the soft iron is changed 4,840 times in each minute. The immense amount of magneto-electricity thus evolved is collected at the axis of the apparatus, and thence passes to the regulator or lamp in the focus of the Lighthouse apparatus.

This light, which was in operation in the Great Exhibition of 1862, was certainly the greatest wonder that that world of marvels contained, and a feeling of awe arose at the contemplation of

a machine that of itself gathers together, from separate masses of quiescent iron, that mysterious agency, or power, or force inexplicable, by which nature's processes are carried on, and by which our very life and actions are maintained, and made it manifest to the sense in light as glorious as the sun itself. The whole process is a marvellous illustration of that correlation of each physical force in nature's workings—an evidence that one power may be traced throughout a train of operations until it emanates in a totally different form, and yet that all these phases of action are identical.

The magnetic current passes from the machine, thus obscurely described, to the lamp, which holds two carbon electrodes, or pencils, placed perpendicularly one over the other, and between the points of which the light appears. These carbon points are formed of graphite, the substance which is found lining worn-out gas retorts, and consist of nearly pure carbon; they are about $\frac{1}{16}$ th of an inch in diameter.

To produce a constant electric light, it is requisite that the carbon points should be maintained separated to a distance proportional to the strength of the current. The intense heat generated by the electric current liquefies a portion of the carbon, and the current passes from one carbon point to another, not through empty space, but through the carbon thus liquefied.

It is in this space between the two carbon points that the light appears, and although they are only $\frac{1}{16}$ th of an inch apart, yet in this minute space this splendid effulgence (for it cannot be called a flame) is of sufficient power to entirely eclipse all other artificial lights. The carbon points under this intense action slowly consume, the upper pencil at about double the rate of the lower one (they require replenishing about every $3\frac{1}{2}$ hours); and the object of the regulating lamp is to maintain them at an exact distance apart proportionate to the force of the magnetic current which is passing between them. This is effected by controlling the descent of the one, and the ascent of the other, by electro-magnets acting on levers, contained within the lamp apparatus.

This minute light, as before said, is of such intensity that no other flame can be compared with it; it is of itself only $\frac{1}{16}$ th of an inch in diameter, but around it is an effulgence which may be half an inch in diameter. Its colour is of the purest white, and in this it differs from all other lights. Mr. Holmes says:—"The object is to have light as much like sunlight as possible. In ascending the stairs of Dungeness Lighthouse—where the magneto-electric light is in operation—it is a most extraordinary thing to observe the light; it always appears as if it was the dawn of day; it never looks like gaslight."

On the 8th of December, 1858, this modification of that mysterious electric power, which—as applied to the mariner's compass—has piloted the sailor for centuries across the seas, was for the first time made to complete its friendly service of guidance and of warning, by being shown from a Lighthouse on the English coast. The magneto-electric light was exhibited from the high light at the South Foreland, near Dover, on that evening, and on those of several subsequent weeks.

The light was subsequently (in June, 1862) shown at Dungeness Lighthouse, and still continues there. It was placed in the Souter Point Lighthouse, near Sunderland, in 1871; and both of the South Foreland Lighthouses were first illuminated with it on January 1, 1872. It is also shown at Cape Grimes, opposite Dungeness.

In these establishments everything is in duplicate, to avert the chances of extinction—two small steam-engines, two magneto-electric machines, two lamps, &c.; and, during fogs, when a more powerful light becomes necessary, a double power (both machines) can be used.

The totally distinct character, the power, and colour of the electric light, will at once distinguish it at any distance from that derived from any other source. Therefore, supposing that this illumination be adopted as an adjunct to that in present use, the stations in which it is applied will be distinguished from their neighbours without the chance of mistake, the fruitful source of accident from the present lights.

A few words on the use of coloured lights. The oil flame is of a yellowish tinge, and this so far neutralises the effect of blue or green lights, that they are found to be inapplicable to Lighthouse purposes. Mr. Holmes believes that, by using the pure electric light, these colours would be almost as serviceable as the bright light itself.

Red is the only effective colour in use, and this in the reflectors is produced by placing a pane of ruby-coloured glass in front of the reflector, or else by a red chimney to the lamp. But this colour absorbs a very large proportion of the white light; and when it was determined to show a revolving red and white light at the Wolf Rock Lighthouse, several important experiments

were made by the Trinity House authorities to determine the ratio of the two beams to give the same amount of intensity. It was found that the quantity of light to be appropriated to the red beam should be to that of the white, as 5,275 is to 2,250, or as 21 to 9 nearly; so that the revolving lenses had to be constructed to these proportions.

One word as to Fog Signals at Light-stations. It is necessary to mark their position when the light is obscured in fogs, snow, storms, or thick weather. A heavy bell is frequently used; but, as ships use such a means of signalling, it is not free from objection. The same with the fog-horn. On board light-ships a Chinese gong, which emits a peculiar and powerful sound, is used. The most effective instrument is the fog-horn, and this is becoming very general where fogs are prevalent, as on the coast of North-East America. Daboll's fog-trumpet is a very effective instrument. It consists of a caloric or hot air engine, which is set in motion directly the fire is lighted, and the air-pump it acts on forces a column of air into a receiver at very great pressure, and this, at a certain number of strokes, is set free through the trumpet. This consists of a tube, revolving horizontally on an axis, at the small end of which is a powerful vibrating spring, or tongue, producing a most powerful note. The mouth of the trumpet being alternately directed towards all points of the horizon, it is said that the sound may be heard in the direction of the wind to the distance of 25 miles in favourable circumstances, or to 5 miles under less advantage.

This above brief exposition must suffice as to the source of light. The apparatus used to control or economise this light is of two characters, either by reflectors or lenses, the catoptric or dioptric systems.

2.—THE CATOPTRIC, OR REFLECTOR SYSTEM.

The effects of a light in giving out rays without any controlling apparatus will be to fill a sphere whose radius is equal to the distance at which the light is visible. In the light shown from a Lighthouse, those beams which are thrown upwards or downwards beyond the reach of vision would be totally lost for practical utility; it becomes necessary, to economise the light, to deflect these rays and direct them to assume that direction only in which they would be required. For all practical purposes, at present, we may consider that those only which issue in an horizontal direction are effective, and our apparatus must be so ordered to answer the end of forming an *horizontal band or zone of light*.

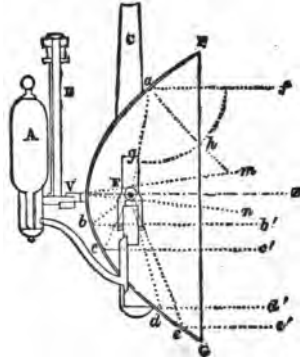
To do this we have two alternatives, the one to *reflect* the errant rays into the proper direction, by means of mirrors of the requisite form; or to *deflect* them, by causing them to pass through some refracting medium for the same purpose; in other words, to apply *lenses* of a particular form *before* the light, or reflectors *behind* the light.

The first idea of economising light, by the means of reflectors, is met with in the history of the Cordouan light. M. Bitri, who remodelled the lantern in 1727, arranged it for burning pit coal, of which 225 lbs. (French) were ignited at once, and lasted the night. Above the fire, instead of having a hollow cupola, as it had previously been, or of being entirely open like other Lighthouses, the circle of the ceiling of the cupola was made the base of an inverted cone, whose apex projected downwards 3 feet; the whole surface of this was covered with tin plates. These becoming reflecting surfaces, served to increase the intensity of the light; but how they were kept free from tarnish, and the effects of the smoke, we are not informed. Here we have the first element of the reflector system, and it is virtually the principle of the present Bordier-Marcet apparatus. Such an arrangement would certainly answer its requirements as applied to a coal fire, and any improvement on it must be also made in conjunction with some better mode of producing a light.

As the Catoptric principle depends on the figure of the parabolic curve, we will first describe this curve.

The Parabola is a conic section, whose figure possessing certain properties, renders it available for the purposes of reflection, and the true formula for its construction, as applied to Lighthouse purposes, is given by Captain Joseph Huddart, F.R.S.

The form given to the Lighthouse reflector is generated by the revolution of this curve round its axis. Its properties will be better understood by the diagram, which represents the section of a Lighthouse reflector and lamp. A is the oil reservoir of the lamp F, which slides on the vertical rod B, and on which it is lowered for trimming, by means of this the flame is accurately replaced in the focus of the reflector at F. P V G is a section of the reflector, and is a parabolic curve; within it is a point, F, which is called the *focus*, which is the situation of the flame. Now it is a fundamental law in optics, that the angle of incidence is equal to the angle of reflection; that is, the ray is thrown off a reflecting surface at the opposite angle to which it is received. The peculiarity of this curved line of the parabola is, that any line drawn from the *focus*, F, to the parabolic curve, as F a, makes with the normal to the curve, as a h, angles equal to the inclination of these same normals respectively to lines drawn parallel to the axis, V Z. Thus a ray from the lamp, F, thrown on the surface of the reflector at a, will be reflected in the direction a f, which is parallel to the axis, V Z, and the angle of reflection is equal to the angle of incidence; or, in other words, it makes with the normal, a h, the angle, g a h, equal to the adjacent angle, h a f. And this property belongs to every portion of the surface of the parabola, and consequently the rays will be represented by the lines F b f', F c f', F d f', &c.



Supposing it possible to produce a perfect reflector of the foregoing figure, and in its focus we were to place a *point* of light, it would send forth a *cylinder* of rays equal in diameter to its double ordinate, or the distance between G and P; and if we had to construct a light apparatus which should exhibit a light in every direction in azimuth, or round the whole 360 degrees of the horizon, it is manifest that it would be impossible to do so with any number of such instruments; there would be dark intervals between the direction of their axes.

But here another circumstance awaits us. The flame of one inch in diameter, used in illuminating such a reflector, supposing the focal length of the reflector to be 4 inches, will subtend an angle of $14^{\circ} 22'$ at the vertex of the parabola, or the angle $m V n$. Thus the reflected rays from the external edges of the flame will diverge from the axis to one-half such an angle on either side of it. This divergence decreases in those rays which strike the surface at greater distances from the vertex; but, combined with other circumstances, between 11° and 15° or 17° of divergence may be considered as effective from such an instrument. It would, therefore, take from twenty-five to thirty-three such reflectors to form a complete zone of light.

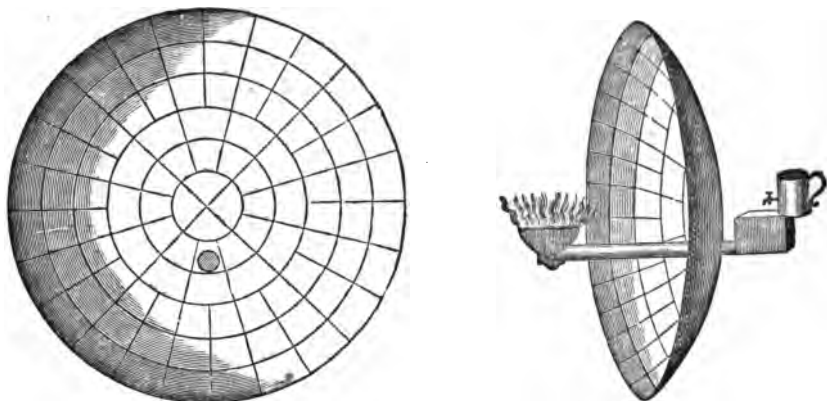
With respect to the invention of parabolic mirrors, we find them mentioned at a very early period, though not in connection with the subject of illumination, but in reference to their powers of focalising the rays of the sun to form burning instruments, an inverse principle of that of lamp reflectors. In a work, entitled "*Pantometria*," by Leonhard Digges, published in London in 1571, the author states that "with a glasse framed by a revolution of a section parabolically, I have set fire to powder half a mile and more distant." In the prosecution of this subject, the celebrated Napier and Sir Isaac Newton experimented with parabolic reflectors before 1673. And the celebrated Buffon, with the same object, proposed the polyzonal lens, now modified for Lighthouse purposes, as will be mentioned hereafter.

The first parabolic reflectors for Lighthouses were used at Liverpool, probably in 1763, certainly previous to 1777, for in that year William Hutchinson, Dock Master of that place, published his "*Practical Seamanship*," and in that work he fully describes the apparatus used in the four Lighthouses built at Liverpool in 1763.*

The origin of their use is curious. It is said, that at a convivial meeting of some scientific men at Liverpool prior to this date, that one of the company wagered that he would read the

* Lighthouses were not always looked upon as useful aids. The Mayor and Corporation of Liverpool wrote to Sir G. Ireland, their representative in Parliament, on January 5, 1670, to appear against Reading's patent for Lighthouses:—"In regard those Lighthouses will be no benefit to our mariners, but a hurt, and expose them to more danger if trust to them; and also be a very great and unnecessary burden and charge to them."—See "*Transactions Historic Society of Lancashire and Cheshire*," vol. vi., pp. 16 and 24.

newspaper at the distance of 200 feet by the light of a farthing candle. This he afterwards won by means of a wooden bowl, lined with putty, in which facets of looking-glass were embedded,



Parabolic Reflectors used in the Liverpool Lighthouses, erected in 1763; copied from a plate in Hutchinson's "Practical Seamanship," 1777, formed of wood, and lined with pieces of looking-glass, or of plates of tin. The oil kept on a level with the flame by a dripping-pot, supplying the reservoir at the back.

and formed a reflector. One of the company was William Hutchinson, who, seizing the idea, thus utilized it.

These reflectors were formed to a parabolic curve by a somewhat rude process, which he describes.

"We have had," says Mr. Hutchinson, "and used here in Liverpool, reflectors of 1, 2, and 3 feet focus, and 3, $5\frac{1}{2}$, $7\frac{1}{2}$, and 12 feet diameter. The smallest made of tin plates soldered together, and the largest of wood covered with plates of looking-glass, and a copper lamp; the cistern part for the oil and wick stands behind the reflector, so that nothing stands before the reflector to interrupt the blaze of the lamp acting upon it, but the tube that goes through with a spreading burner mouth-piece, to spread the blaze parallel thereto, and with the middle of it just in the focus or burning point of the reflector.

"The lamps are like the reflectors, proportional to make a greater or less blaze as required; their spreading burning parts are from 3 to 12 and 14 inches broad, and are trimmed every four hours.

"Thus are these Lighthouses constructed, kept, and situated, and have stood the test of a fair trial, and the preference and advantages given to them even by their opponents, as there always will be to new things commonly calling them new whims, till time and trial confirm them as useful improvements."

Thus writes Mr. Hutchinson, in 1777; and he also proposed other and more complete reflectors similar to those we now possess.

The reflectors now used in the Trinity House lights are constructed, as before mentioned, according to the formula proposed by Captain Joseph Huddart, F.R.S., an Elder Brother of the Trinity Corporation; and a man of whom England may be proud. These reflectors are hence known by the name of Huddart's reflectors; and, as far as their principle is concerned, they may be pronounced perfect. Their manufacture is conducted with every care; but, of course, it is *absolutely* impossible to produce a faultless instrument; but as they are made, they may be considered among the most perfect specimens of workmanship.

The proposition for parabolic reflectors was made by M. Teulère, of the French Royal Engineers, in a memoir dated June 26, 1783, as intended for the Cordouan Lighthouse, but they were in use in England many years previous to that period.* They were also constructed, by Lenoir, of silvered copper, under the direction of the Chevalier Borda, in 1780.

* In the admirable account of the Skerryvore Lighthouse, &c., by Alan Stevenson, Esq., page 265, and in his "Elementary Treatise on Lighthouses," page 73, the merit of the first application of reflectors is awarded to

In the year 1786, reflectors and oil lamps were proposed at the first meeting of the Scottish Lighthouse Commissioners. The first metallic reflectors used in the northern Lighthouses were constructed by Mr. Thomas Smith, of Edinburgh. The figure was given to them by a plaster mould, and the cavity was afterwards filled in, by means of cement, with small facets of mirror-glass. This must have done its work very imperfectly, although the general figure was capable of considerable accuracy. In 1803, the first polished metal reflectors used in Scotland were placed in Inch-Keith Lighthouse.

The reflector system has been called the English system, in contradistinction to the lenticular or French system. This is because we had numerous Lighthouses in which this fine apparatus had been perfected before the French, who were second in the field, had any systematic arrangement, which was indeed not until after 1825, when the late Admiral Rossel drew up a perfect system for the lighting of the whole of the French coasts, an immense advantage which the English have not been able to possess. In the early days of the present Lighthouses the reflectors were supposed to do their work so perfectly that but little could be gained by a change to the expensive and difficult system of lenses. Later enquiries have not entirely subverted this opinion, as is stated in the report of the Royal Commission, March, 1861:—

"It has been generally assumed that the dioptric is preferable to the catoptric system; but while your Commissioners do not controvert this opinion, they have conclusive evidence that many of the catoptric lights in England are not only excellent in themselves, but exceed in efficiency the dioptric lights on its shores. The first part of Question 7, of Circular VIII, addressed to mariners, runs thus:—'What British light have you usually seen farthest off?' And out of the 579 witnesses who have answered this question, the greatest distances are mentioned with reference to the lights at Lundy Island, the Calf of Man, 'Tuskar, Flamborough Head, Beachy Head, and Cromer; and the greatest numbers of witnesses mention Flamborough Head, the Lizard, Lundy, Beachy Head, the Start, and the South Stack, all of which are catoptric revolving lights, with the exception of the Lizard, which is catoptric fixed, and the Lundy and Start, which are dioptric revolving."

The reflectors in use at the Trinity House are 21 inches in diameter for shore lights, and 4 inches of focal length, having a total reflecting surface of 518·6 square inches. They cost about £31 10s. The Scotch are of 24 inches aperture, and cost £48. They are most excellently made, and have lasted, unimpaired, 30 or 40 years.

The brilliancy of the ray from this reflector is considerably stronger in the direction of the axis, that is, when viewed directly in front, than it is for some distance on either side of that direction; and at great distances, in *fixed* lights, when you are in the direction *between* the axes of the adjoining reflectors, the light is frequently glimmering and feeble, but a small change in the position of the ship brings you again into the brighter beam of the reflector, one of which, it will be understood, is only in sight at a time. This is an important observation to the sailor, in distinguishing one fixed light from another, of different description of apparatus.

When a *revolving light* is required, a number of these reflectors are fixed to the sides of a triangular or quadrangular iron frame, and the whole caused to revolve in regular periods, by means of clockwork. The reflectors on each side of the revolving frame, from four to eight in number, are thus successively directed to every point of the horizon; and the combined result of their rays form a flash of greater or less duration, according to the rapidity of their revolution.

From the amount of divergence, the period during which such a light will remain visible is from 12 to 15 seconds, the light gradually increasing, and as gradually diminishing. And as the action of the reflector is only in the direction to which it is placed, the intervals between the flashes will be quite dark, for a shorter or longer period, according to the distance from which it is viewed, whether it is beyond that to which the unassisted flame will reach.

M. Teulère. But the author quotes from a second (or Liverpool) edition of Hutchinson's work, in 1791. The first (or London) edition, illustrated by the same plates, and containing much the same matter, was published in 1777, under the title of "A Treatise on Practical Seamanship," &c.; a different title to the second edition. It is beyond question that reflectors were in use in Liverpool before they were in the Cordouan.

Hutchinson closed a life of much usefulness and excellence in 1800. He was dock-master in or prior to 1759. In 1764 he commenced a valuable series of tide and meteorological observations, continued till August, 1793. In early life he was shipwrecked, and the crew being without food, they drew lots to ascertain who should be put to death, to furnish a revolting and horrible meal to the survivors. The lot fell upon Hutchinson, but they were providentially saved by a ship which bore in sight. He ever afterwards observed this day as one of strict devotion. "Trans. Historical Society of Lancashire and Cheshire," vol. ix., pages 240, 241.

Lighthouses.

C

The light from a revolving catoptric or reflecting system is much brighter than from a fixed light on either principle, as you have the combined effect of several reflectors, each of which gives an equal amount of light, it is calculated, to 350 or 450 such lights without any reflectors.

In floating Lightvessels the light is always shown from parabolic reflectors. These are smaller than those used in Lighthouses, being 12 inches in diameter. For fixed lights, eight lamps and reflectors, each suspended on gimbals, or on ball and socket-joints, so that they always maintain their perpendicularity, notwithstanding the rolling of the vessel, are arranged in an octagonal lantern, which goes round the mast, and is hauled up to the mast-head when on service, and is let down on the deck during the day, or while the lamps are trimming. Revolving lights for

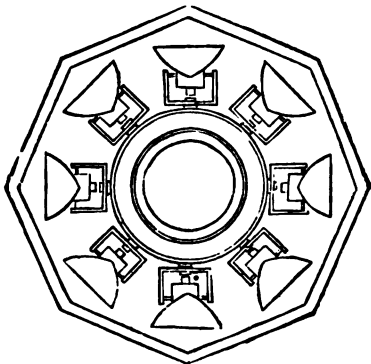
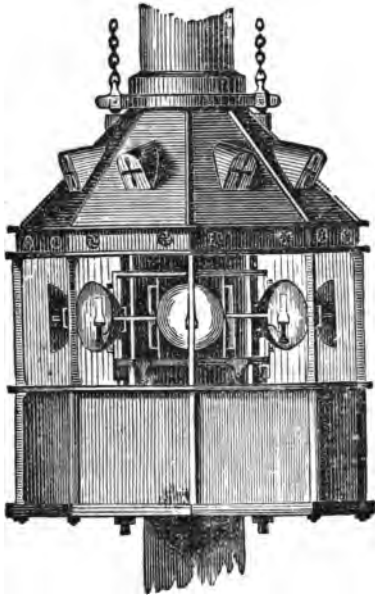
floating Lightvessels have four or eight lamps, and similar reflectors, and the lantern revolves around the mast. The adjoining diagram is a representation of one of Messrs. Wilkins' Revolving Light Lanterns. It is very similar to that of a fixed light, the clock-work moving it is placed between decks.

Several of the Lightvessels are now made to show revolving *red* or bright lights where they were formerly fixed lights, as in the case of the *Nore Lightship*, it having been found that in many cases it was difficult to distinguish the fixed light of the Lightvessel from the mast-head lights of the ships at anchor near them.

An apparatus for producing an *intermitting* light, of the only appearance to which such a term is applicable, is in use in three of the Scottish Light-houses, the invention of Mr. Robert Stevenson. It is an arrangement by means of which the light is suddenly obscured by an eclipser, and as suddenly appears again at its full brilliancy. This feature distinguishes it completely from revolving lights, which come gradually to their greatest brightness, and as gradually decrease, and this either from the reflecting or refracting apparatus. This effect could be easily and economically produced by the use of gas, as before explained.

There is yet another sort of reflector in use in France for harbour lights, called the *Bordier Marcet* apparatus, from its inventor, or the *sideral lamp* (*lanterne sidérale*). It is used with a single lamp, and consists of two circular reflectors, about 13½ inches diameter, whose figure is formed by the revolution of a parabola around its focus in an horizontal plane; the centre of this is taken out to admit the lamp, which thus has all around it, above and below, a reflecting surface, which sends its upward and downward rays in an horizontal direction.

The lights in the ensuing list, which are upon the catoptric or reflecting system, are distinguished by this mark ●. Their magnitude, or order, is not indicated; the class of the light is to be inferred from its importance.



2.—THE DIOPTRIC, OR LENS SYSTEM.

This system—that in which the controlling apparatus is placed before the light—is next to be considered.

There are several very early notices, which seem to shadow out this principle. One is given in Smeaton's account of the Eddystone, where a London optician proposed to grind the panes of the lantern to circular segments, so as to form a sphere of 15 feet in diameter. This was negatived, and we cannot learn what the particulars were, although an optician, it would be thought, would deal with refraction and economise the light.

The use of lenses in Lighthouses dates from early times. It is more than probable that Argand's invention soon directed attention to the best mode of concentrating the light. William Hutchinson relates an experiment tried at Liverpool with a hollow lens filled with brine, which, however, was broken by the heat of the lamp. It is certain that they were placed in one of the Portland Lighthouses between 1786 and 1790, by Thomas Rogers. These lenses were 21 inches in diameter, and $5\frac{1}{4}$ inches thick in the centre; the flame of the lamp was 3 inches in diameter, and behind it was placed a glass (spherical) reflector, 12 or 18 inches in diameter, and by a new method silvered over the convex side without quicksilver. These lenses were also adopted by Rogers in the Lighthouses at the Hill of Howth, and at Waterford. Similar, but smaller lenses, 16 or 18 inches in diameter, carefully worked, and which cost £50 each, were in use at the North Foreland. There were fifteen of them placed there at the commencement of the present century by the Governors of Greenwich Hospital, where they remained till 1834, when the Trinity House replaced them by reflectors, which have again been removed for a beautiful dioptric apparatus.

The lens apparatus now in use is peculiar. It is called, from its figure, the Annular or Polygonal Lens.

The history of the polygonal lens is simple. Like the parabolic reflector, it was originally designed for a burning instrument, by collecting the rays of the sun, and for no other purpose. For a very long period these instruments, of various forms, occupied a large share of the attention of the experimentalists of the last and preceding centuries. Modern progress has converted them into scientific toys.

The merit of the earliest suggestion is due to the celebrated Buffon, the French naturalist, who, in 1773, according to Condorcet, proposed, for a burning glass, to form it of three concentric circular pieces upon each other. If a lens were required of 24 inches in diameter, and 3 inches thick in the middle, then the central portion was to be of 8 inches diameter, and 1 inch thick, inserted into a circular zone, ground to the same focus, and 16 inches in diameter; and this again into a similar zone of 24 inches. Buffon states that the rays would be twice as powerful passing through 1 inch as they would through 3 inches thickness of glass.

The suggestion of Buffon was acted on by the Abbé Rochon, with some success, in 1780; but his operation consisted in grinding down a single piece of glass into concentric rings. A similar lens was made by Messrs. Cookson, of Newcastle-upon-Tyne, and tried by the Northern Lighthouse Board. This process is necessarily attended with an enormous amount of trouble and expense, and the result must be precarious.

The particulars of Buffon's invention appear in most of the English and Scotch Encyclopædias, published after 1796. In 1812, Sir David Brewster proposed a plan for a built lens in the Edinburgh Encyclopædia, vol. v. This was also intended for a burning instrument, and no mention is made at this time for its converse properties, that of distributing light, as adopted for Lighthouses. There is no need of controversy on this. Lighthouses, at this date, had not then attained the importance they now have; and the beautiful reflectors then in use, as in the Bell Rock, were considered to do their work perfectly. Besides this, the polygonal lens is not adapted for *fixed lights*; the cylindric refractor for the purpose was not perfected till 1836.

It is to the late M. Augustin Fresnel that we owe the introduction of the lenticular system, and hence it is frequently called by his name. Its origin dates from 1819. During the progress of the great Trigonometrical Survey of France, under MM. Arago and Mathieu, powerful lights were used as signals; and one of these lenses, 3 feet in diameter, constructed by M. Soleil, from the designs of Fresnel, was applied to a large lamp on Cape Griznez, and other places, in the autumn of 1821. Major Colby, who was employed in the operations on our side, informed

Mr. Robert Stevenson of the particulars, in November, 1821. On July 23, 1823, the splendid revolving apparatus of this system was first shown in the Cordouan Lighthouses.

In 1824, Mr. Robert Stevenson visited the French Lighthouses, &c., and reported on them to the Scottish Lighthouse Board. The first application of the system there was in the Isle of May Light, by Mr. Alan Stevenson, the talented son of the before-named eminent Lighthouse engineer, in October, 1825. Holland was the first to follow France in the use of the system. The Trinity House erected the first lenticular apparatus in the Start Lighthouse, in 1836.

The Lighthouses of France were very few in number prior to Fresnel's invention; upon his success the French Government determined upon the establishment of the grand system adopted in 1825, and of the sole application of the lens in all cases of new lights. The case was different on our side. Many of the present lights existed long before the invention of Fresnel, and, having been erected as exigencies arose, there necessarily was not that exact order and regularity that might have been attained by a total change and remodelling at any period. That our system does not suffer by comparison with those of other countries, is a grand proof of the talent of our Trinity Board and other authorities, and of the skill of our engineers.

The lenticular apparatus may be thus described:—It consists of a central and powerful lamp, of course emitting luminous beams in every direction. Around this is placed an arrangement of glass, so formed as to *refract* these beams into parallel rays in the required directions.

The laws of refraction are well understood, and require but little explanation here. We shall just allude to it sufficiently to elucidate our subject. When a ray of light passes out of a rarer into a denser medium, or *vice versa*, it is refracted from its original direction, and assumes that which is induced principally by the density of the second medium. This is made familiar by the bent appearance of an oar, or a mooring when it dips beneath the water. The use of the glass lens is thus to bend the rays which fall on and emerge from its two surfaces. The action of the bull's-eye lantern, in sending forth the rays in one direction, will explain this principle. As the normal figure of the lens is that to which its powers are due, the polyzonal lens must be considered as such a complete lens with the unnecessary portions cut away.

One great advantage in the decomposition of the original lens is that of diminishing its weight very considerably, and also the greater certainty of the more uniform density of the material from which it is made. There is also another point in the construction; it affords the means for correcting the aberration for sphericity, a great point in the manufacture of lenses. The principle of the polyzonal lens being thus explained, the method of applying these to control the luminous rays of a lamp is now to be shown. For this purpose they are built into a square figure, that is for such lenses as are for revolving lights.

For a *revolving* light, eight of such lenses, which, for a light of the first order, have a focal length of 3 feet 0.25 inches, are formed into an octangular drum which surrounds the central lamp, placed in their common focus. This, then, is the principal portion of the controlling apparatus for a *revolving* light.

The lamp which this system is applied to contains four concentric wicks (of the respective diameters of .857, 1.69, 2.52, and 3.39 inches), and the oil, by a peculiar construction, either by a mechanical contrivance of small pumps worked by clock-work, or of springs or weights, or else

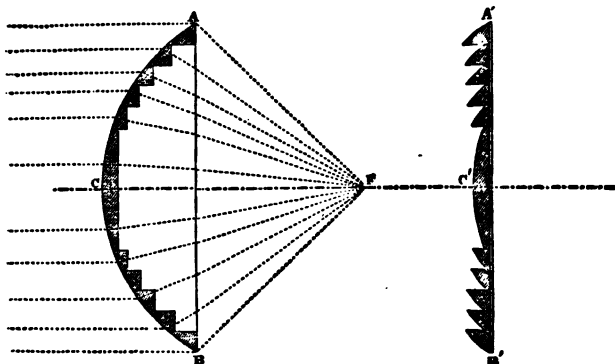


Diagram illustrative of the principle of the polyzonal lens. A B C is a section of an ordinary plano-convex lens, whose focus is at F. As the great thickness of the central portion abstracts much of the light in its passage, the convex surface may be supposed to be cut into circular zones, whose section is as the shaded part of the diagram, and these sections being all placed in one plane, as A' B' C', the latter will have all the optical properties of the former, because the two surfaces are still of the same relative figure.

by the pressure of air upon the surface of the oil in the reservoir, is made to flow copiously over these wicks, otherwise the great heat evolved during its combustion would char the wicks. This lamp consumes a pint of oil per hour; or, according to the computation of the French Commission des Phares, 570 gallons per year. This powerful apparatus being in the centre of the surrounding lenticular system, the ray impinging upon each lens is refracted into a series of parallel, or nearly parallel beams, whose section is the figure of the lens, in the case of the revolving light, or into a continuous zone or band of light around the horizon in the fixed light. M. A. Fresnel, in the construction of the Cordouan dioptric system, used a more complicated system than that above described. A similar arrangement also is in operation at the Skerryvore, and some other stations; and in these cases every available means is taken to economise the light.

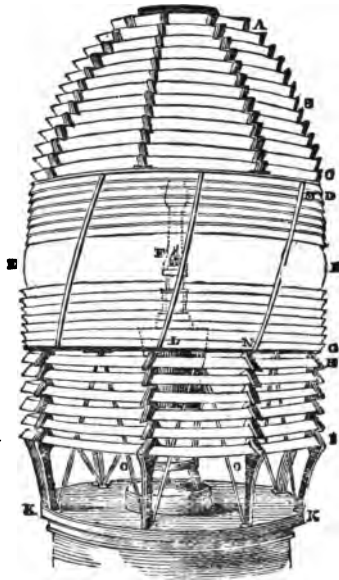


The central portion of a first order dioptric revolving light apparatus. A A represents the polygonal lenses, of which there are eight, arranged around the central lamp. The diameter of the octangular prism formed by them is 6ft. 0·5 in.

For a *fixed* light, another adaptation of the principle is used. We must suppose the section of the lens, A B (Diagram on page 20), to revolve around the focal point, F, and in the same plane, which will produce a series of horizontal belts, having their vertical section similar to that of the lens in its circular form. The effect of this, applied to a central lamp, will be to produce a continuous belt of light in azimuth, instead of a series of beams parallel, or nearly parallel, to the axis of the circular lenses, as in the case of the revolving apparatus. In the focus of this belt, or drum of glass, is placed the lamp, as in the former case.

Originally this cylinder for a fixed light of the first order was made into a polygon of thirty-two sides; but in 1836 the Messrs. Cookson, of Newcastle-upon-Tyne, made one entire, which was the greatest step then achieved in the construction of these lenses.

The engraving represents a first order fixed light apparatus, about 6 feet in diameter, and 10 feet high. F is the flame (and the focus of the apparatus); L is the lamp, supported on the pedestal, K K; E E is the central part of the lens, embracing the same portion, as the eight polygonal lenses previously described, and it will be seen by the outer edges that the section of the belt is the same. It is separated into distinct panels by diagonal framework, N N. These diagonal divisions were first suggested by Alan Stevenson, and their obvious use is to cross the flame at an angle instead of a perpendicular line, which would obscure the light throughout its length. The upper series of thirteen zones, A B C, and the lower of six zones, H I, are described presently.

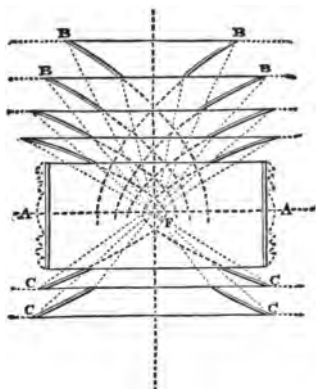


View of a first order fixed Dioptric Light, with upper and lower refracting zones.

As the systems we have been explaining will only act upon those beams which are comprised within the angle contained between the focus and the upper and lower edges of the central lenses, or about three-eighths of the whole quantity of light, it becomes necessary to economise, as far as possible, those portions which are above and beneath this portion of the apparatus.

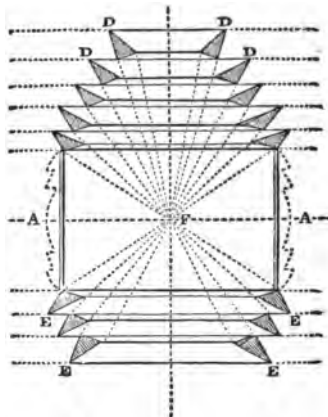
In the early apparatus, the upper portion consisted of a series of catoptric zones, formed of separate pieces of silvered concave glass, arranged in such a manner as to reflect horizontally the beams thrown on to them. The degree of curvature and inclination to the plane of the system was determined, as in the case of the parabolic reflector, by considering their section to be a portion of such parabolas as would, if carried around the focus, form perfect reflectors, as will be readily understood by the subjoined diagram, where the dotted lines show the form of that portion of the parabola not comprised in the catoptric zone. The same applies to the lower portion of the system.

In the small or harbour lights, instead of these reflecting mirrors, another plan was first used by M. Augustin Fresnel, that of catadioptric rings, composed of glass, which *totally* reflected the rays thrown on to them. The action of these zones, or rings, is explained in the second diagram.



CATOPTRIC ZONES.

F, the focus of the system and the situation of the light; A A, principal lenses; B B, upper reflecting zones; C C, lower reflecting zones. The parabolic curves, of which the section of the zones is a portion, is continued round the focus in the dotted lines.



CATADIOPTRIC ZONES.

F, the focus, and A A the principal lenses, as in the adjoining diagram; D D, the upper system of totally reflecting prismatic zones; and E E, the lower portion of the system. The action of these prisms is explained in the next diagram.

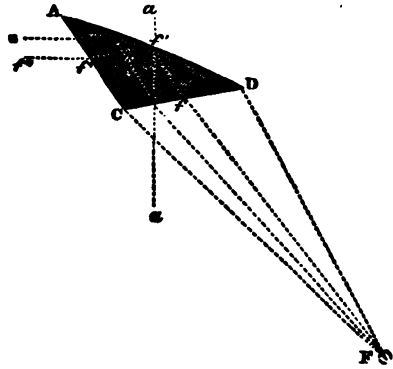
The first example of this catadioptric apparatus was constructed by M. Tabouret, who was connected with the French Commission des Ponts et Chaussées, a short time before the death of M. Augustin Fresnel.

One of the most important improvements which took place in pharology was the adaptation of this accessory on a much larger scale than had previously been supposed possible, by the suggestion of Mr. Alan Stevenson, who, in his construction of the Skerryvore Lighthouse, used every means to render this important edifice most complete in every respect. In conjunction with M. Leonor Fresnel and M. François, Jun., the constructors, this apparatus was added to the lower portion of the Skerryvore dioptric light, consisting of five glass zones, which replaced in the ordinary system four horizontal zones, each composed of thirty-two concave mirrors. In a fixed light apparatus of the first order, nineteen of these catadioptric zones replace eleven reflecting zones.

"Nothing can be more beautiful," says Mr. Alan Stevenson, "than an entire apparatus for a fixed light of the first order. It consists of a central belt of refractors, forming a hollow cylinder, 6 feet in diameter and 30 inches high; below it are six triangular rings of glass, ranged in a cylindrical form, and above a crown of thirteen rings of glass, forming by their union a hollow cage, composed of polished glass, 10 feet high and 6 feet in diameter. I know of no work of art more beautiful or creditable to the boldness, ardour, intelligence, and zeal of the artist."

The divergence of the polyzonal lens is much less than that of the parabolic reflector, being about $5^{\circ} 9'$, owing to the smaller angle subtended by the flame upon the inner surface of the lenses. From this cause, the flash in a revolving light is but of short duration, while that from revolving reflectors lasts much longer, from their greater powers of divergence. To compensate for this, the light from the lenticular apparatus is, within a certain distance, continuous; the upper and lower portions of the system giving a steady light.

FIXED AND FLASHING LIGHTS.—There is one character of light in the French (and other) systems which is peculiar, and requires special mention, as it does not appear to be properly understood by many, and is frequently an important distinction. This, the *feu fixe varie par une eclat* of Fresnel, has this appearance in a light whose period is four minutes: first, a bright fixed light, for above $3\frac{1}{2}$ minutes; then a short, but not total eclipse, for about 10 seconds; then a very bright flash, of much greater intensity than the preceding fixed light; then another short eclipse, and then the fixed light as before. In the larger apparatus the distinction between this and an ordinary revolving light is well marked by the intensity of the fixed light between the brighter flashes, and also especially by the short eclipses preceding and following the bright flash. In the smaller apparatus the bright flash is not so well marked; but the short eclipses will be a clear index to its character.



A D C will represent a section of this glass zone, which is so placed with regard to the focus, F, that a ray falling upon it at f will be at such an angle on D A, that instead of passing out, it will be totally reflected from that point of incidence, as f', and will finally assume the direction, F F', of a right angle to the normal, a a, as required. This angle, in passing from glass into air, is about $41^{\circ} 49'$, and a greater angle of incidence gives a reflected ray. In the largest zone, the radius of the arc (the reflecting surface), D A, is equal to 28.46 feet, and the angle, D C A, is equal to $117^{\circ} 26' 42''$.

There are different modes for producing this effect.

Fresnel's plan was to have an ordinary fixed light apparatus, around the outside of which two revolving panels of refractors passed in regular succession. These panels consisted of *vertical* lenses, similar to the *horizontal* central belt. They thus received on their inner surface all the light which issued from the central lamp through the fixed lens on the angle which they intercepted, and which each refracts into *parallel* beams to the direction it faces as it revolves. Therefore, instead of the rays passing in all directions on that azimuth, a portion of them are collected and concentrated in one direction for the bright flash; and the angle between this bright beam and that emanating from the fixed portion of the apparatus is that which forms the eclipses. The upper and lower zones, of course, are those which maintain a constant light; so that the eclipses in this, as well as in most other lenticular lights, is not total within short distances.

Sometimes the flash is coloured *red*, as in the light on Chausey, Vièrge Island, Point d'Alpréché, &c.; and in a few cases *green*, as in some of the Turkish lights, &c.

In another method of producing this effect, constructed by M. Letourneau, the necessity for using two lenses is avoided; and, consequently, the loss of light inevitable in the absorption of a portion in its passage through the glass. In the central portion of the apparatus are four of the polyzonal lenses, similar to those figured A A, on page 21; alternating with these are four portions of a fixed light apparatus, shown by the horizontal belts, E E, in the lower figure, on page 21. For a fixed light, of course, these horizontal belts are carried all round; and the light appears as a vertical stripe of the breadth of the flame from the top to the bottom of the belt. In the polyzonal lens the light appears to cover its whole surface, and is only visible when in front. The whole apparatus is made to revolve by machinery, and the appearance is as above described; first, the fixed light from the portions on either side; then a short eclipse due to the light being diverted by the great lens; then the full blaze of the lens for 8 or 10 seconds; then another eclipse, and so on.

It is considered by many, including the great Alan Stevenson, that the fixed and flashing light is not altogether a desirable variety, its appearance being too much like the revolving light; in fact, in our official lists they were always set down as revolving lights, till within the last few years.

In coast lights, where usually the light is not required all round the horizon, that is over the land in the rear, there would be a waste of the light from the great lamp, which, of course, suffices to illuminate the whole horizon. In the reflector light this is avoided, as a smaller number of lamps is used. But in the dioptric lights the light was economised by the use of spherical mirrors placed on that side. These spherical mirrors, usually of silvered copper, were formed to a curve, whose radius is equal to that of the focal lenses they are applied to, having the position of the flame as a centre. They thus reflect the rays back again through the flame upon the lenses on the opposite side. Flame, being perfectly transparent, there is no loss of power in this.

This method of economising light was practised, as aforesaid, by Mr. Thomas Rogers, about 1788; he used blown glass spherical segments made into mirrors. Mr. Alan Stevenson proposed it in 1834, and MM. Frangois and Letourneau have made them by grinding the glass to the focal curvature.

There are very many other considerations in the economy of Lighthouses that deserve notice, but which would unduly extend this brief description. The excellent works of Mr. A Stevenson, and of his brother Mr. T. Stevenson, will afford much instruction.

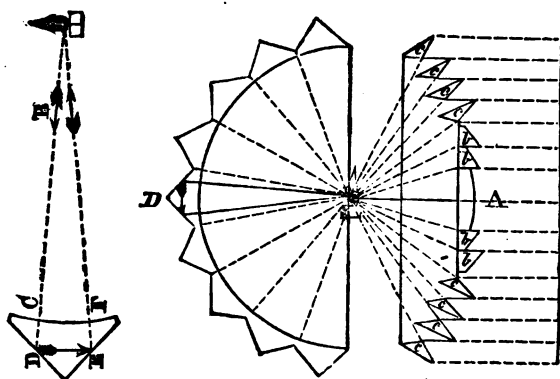
THE HOLOPHOTAL SYSTEM.—As far as they were applied, the catoptric and dioptric systems acted perfectly; but still there was some waste of light, caused in one direction by the divergence of the instruments, and, in another, by their construction. The consideration of this loss of power led to the next steps in the science of pharology; since that period, some new arrangements have been proposed, by which some of the disadvantages of the dioptric system have been partially avoided. M. Letourneau proposed lengthening the duration of the great flash of the dioptric lens, by dividing it into two portions, and setting each half at a slight angle outwards; this would produce the desired effect, but it must be at the expense of brilliancy. Several other minor improvements, also, have been suggested, but the main features of the system have remained unaltered.

The waste of light in the catoptric is that angle comprised between the angle formed by the lips of the reflector and the flame, and the horizontal ray which strikes the outer edge of the reflector. It is a part of the angle Paf , in the upper part of the diagram on page 15. That portion of the light which passes upwards is, of course, lost for useful effect; the other portions may be considered as serviceable. In the year 1849, Mr. Thomas Stevenson, son of Robert brother of Alan Stevenson, proposed some arrangements which obviate this loss, upon what is termed the *ho'ophotal system*, from two Greek words, signifying "whole light."

Proceeding upon the assumption that the whole of the emitted rays from the central lamp may be made to assume the horizontal direction, Mr. Thomas Stevenson has made several most excellent arrangements, which, however, we cannot fully describe here. The simplest form is that of an hemispherical metallic reflector, in the focus of which is placed the lamp; before the lamp

is a refracting polyzonal lens, of such a section that the whole of the direct rays from the lamp, and the reflected rays from the posterior reflector, are parallelized on their emergence.

Carrying this principle to greater refinement, and as it was found that the totally reflecting glass prisms were effective compared with metallic reflections as 140 to 87, a hemispherical arrangement of glass is proposed, which, by refraction and total reflection, produces the same result as the metallic hemisphere. The section adjacent will explain its action. In front of the flame, in the centre, is placed a holophote, A, consisting of a central lens,



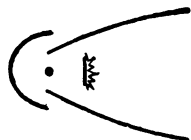
Sections of Mr. Thomas Stevenson's hemispherical mirror, consisting of totally reflecting prisms as at D, of which an enlarged section is shown at D C F E, throwing all the rays back through the flame on to the holophotal lenses at A, which then send them in the direction D A in an horizontal beam, and thus economises the whole of the light.

attached to which are the two concentric rings, as in the ordinary polyzonal lens. Outside of these is a series of four circular catadioptric rings, whose action is described on page 22. These will horizontalize all the beams which fall from the lamp on their inner face. For the portion of the light behind the flame, a hemispherical glass mirror is placed, consisting of a concentric series of circular prisms, the section and action of which are shown in the smaller cut (page 24). The ray, B C, from the central flame, after passing through the lens, strikes its exterior face at D, is reflected to E, then again totally reflected at E in the direction of F, as indicated by the arrows; so that every ray passing behind the light is received on this diacatoptric mirror, and made to revert through the flame (which is transparent), and thence, in the same direction, on to the holophote in front of it. Thus every portion of the light is economised.

The action of these totally-reflecting cata-dioptric prismatic zones—a long array of words, which, however, are expressive—may be explained by a very familiar experiment. Place a stick of sealing-wax, a pencil, or any other substance, in a sloping direction from you, in a tumbler of water. Raise the tumbler above the level of the eye, until, at a *certain angle*, you will see the image of the sealing-wax, &c., *totally reflected* under the *upper surface* of the water.

The formulæ for the construction of this ingenious apparatus were calculated by Mr. William Swan, F.R.S.E. The glass refracting mirror has one advantage over a metallic mirror in its powers of radiation, as in an experiment the heat in the interior of the apparatus was so great as to cause the oil to boil; an inconvenience, however, which was afterwards obviated mechanically. Very numerous other applications of his principle are also proposed.

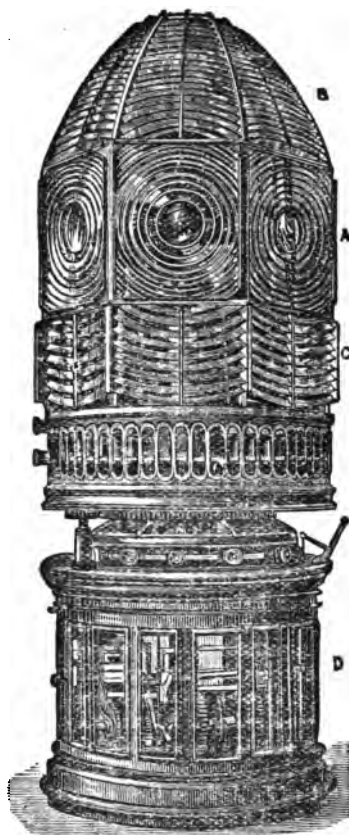
The ordinary paraboloidal reflector is rendered holophotal, as follows:—A small portion of the back of the reflector is cut off, behind the parameter, the perpendicular line which passes through the focus, F (diagram on page 15); for this is substituted a portion of a *spherical* mirror of the same focus. In front of the flame a lens



with three diacatoptric rings is added. The action of the spherical reflector is to return all the rays impinging on it back through the flame, and thus on to the posterior sides of the lens and diacatoptric rings.

Therefore, all the rays which emerge from the lens, &c., will be horizontal; and the remainder, those impinging on the paraboloid, will also be reflected in the same direction. Peterhead light (1859) is on this principle. The Horsburgh Lighthouse, in the Strait of Singapore, is fitted with nine such holophotal reflectors; three on each face of a revolving frame, each side of which, it is said, gives as much light as five reflectors of the ordinary kind. This was completed in 1851. Another one, on a large scale, is at Hoy Sound, Orkney.

Fresnel's revolving light system, as at work in the Skerryvore and the Cordouan, with its beautiful but complicated upper system, is rendered holophotal by a very simple means. The zones above and below the main lenses act in the same way as the central lens; that is, these zones, being made horizontal, are made of segments of circles concentric with the centre of the great lens beneath and above them; and by the whole apparatus revolving, nearly the whole of the light is projected horizontally in the eight directions of the octagonal prism; and, therefore, when each face is presented to any point, the whole of it is luminous. In those lenticular



View of the holophotal revolving lens apparatus for the Great Bassas Rocks, Ceylon. A, the central polyzonal lenses, as shown on page 20. B and C, the upper and lower holophotal rings. D, the pedestal, containing the machinery by which the whole apparatus is made to revolve.

arrangements, which had the upper and lower zones horizontal, or the same as in the fixed light, these upper and lower zones showed only a vertical strip of light of the same breadth as the flame, and this is the continuous light which is visible between the flashes.

The beautiful holophotal adaptations have been established at several important localities. The magnificent light at Whalsey Skerries, Shetland, constructed by Messrs. Chance, of Birmingham, and those on Lundy Island, St. Abbs Head, Flamborough Head, the Red Sea, &c., have examples of this extending system.

Mr. Thomas Stevenson has constructed a holophotal arrangement which he calls an azimuthal condensing light, by which the whole light is used down a narrow channel: there are examples at Oronsay and Kyle Akin (1857), West of Scotland. Another most ingenious appliance is that at Stornoway, Lewis Island, by which a beacon on the dangerous Arnish Rock is made to show an *apparent* light, reflected by a peculiar apparatus from a light on the Lighthouse on the adjacent point.

As regards the history of the holophotal system, we may refer to Thomas Rogers's plan (1788), before mentioned. Sir David Brewster also proposed an arrangement of lenses, as a burning instrument, in 1812; and the same for Lighthouses, in 1823. Mr. Alexander Gordon, C.E., also constructed a combination of lens and reflector, which economised much of the stray light, in 1847. The carrying this system into full practice, by Mr. Thomas Stevenson, is as above related.

There is one other important portion of the Lighthouse which requires our notice—the lantern or light-room. In the early days of the system, this consisted of a cylinder, formed of massive wooden frames, holding small but thick panes of plate-glass, consequently these window bars and supporting posts so much interfered with the light, that in some directions it was almost entirely obscured, and this has been the case in a much modified degree, in some places, nearly up to the present time, and very greatly interfered with the experiments with gas made at Howth Baily Lighthouse. This defect was greatly remedied by Mr. Alan Stevenson, at the Skerryvore, by the introduction of the diagonal framework of the lantern. The glass was made in triangular panes, fixed in gun-metal framework, which, although necessarily massive, by crossing the light diagonally, did not obscure the whole of the perpendicular beam, as was the case with the older light-rooms. This drawback has been reduced to a minimum by Mr. James N. Douglass, in his system, which consists of a series of lozenge-shaped panes, supported by steel frames, bent to the curvature of the lantern, and thus presenting only the thinnest possible edge towards any point of the horizon. These spiral bands hold the pane of glass, which is also bent to the curve of the light-room, and accurately ground to the size of the frame; and the lantern is thus built up of separate elements, which unite to form a cylinder of the strongest character, and the framework of which, from a short distance, will be entirely invisible when seen immediately in front.

A first order lenticular apparatus is one of the most beautiful objects in the world. It is a combination of elements, nearly 12 feet high and 6 feet in diameter, constructed with the utmost skill and refinement, and involving in its structure some of the highest principles of applied science.

A *first* order light apparatus, as above said, is 12 feet high and 6 feet in diameter; and the cost of the lenses alone varies from £1,288 to £1,636; or, with the cost of all apparatus, and light-room or lantern, £2,488 to £2,984.

A *second* order light apparatus is 4 feet 7 inches in diameter; the lens costs from £788 to £1,131, or altogether, £1,624 to £2,187.

A *third* order apparatus, diameter 3 feet 3½ inches, costs £378 to £704, or altogether, £882 to £1,456.

A *fourth* order, or *harbour* light, is 19½ inches in diameter; costs from £157 to £255 for the lenses, or £329 to £427 complete.

A *fifth* order harbour light, 14½ inches in diameter, costs £103 to £195, or £257 to £349 complete.

The *sixth* order, or smallest size of harbour lens light, is 11½ inches in diameter; costs about £70, or complete £216.*

* These prices, which are common to nearly all manufacturers, are taken from the Tariff of Messrs. Chance, Brothers and Co., Birmingham.

In the early days of the lens lights we were entirely dependent on the French for their construction. The superior character of the St. Gobain and Fremontre glass, and the appliances of MM. Soleil, Frangois, Letourneau, Sautter, &c., kept them in possession of nearly all the construction of lenses in use. The only exceptions, in our country, were those made by Messrs. Cookson, of Newcastle-upon-Tyne, who, about 1836, made some apparatus, as that of Hartlepool, &c.

M. Degrand, of the French Lighthouse Commission, has introduced another process for making the lenses, by forming them of thin sheets of moulded or *cast* glass. This is in use in the beacon light of Walde Point, near Calais, but has not been made much use of. Since 1865, Messrs. Chance, Brothers, of Birmingham, have become the great manufacturers of dioptric apparatus, and a very great number of splendid apparatus have been placed by them in every quarter of the globe since that period. The great improvements both in the quality of the glass, as well as in the elaborate refinement of the optical principles involved, have been acquired through the talent of Mr. James Chance. It would extend this introduction far beyond its limits if all the varied adaptations of the dioptric principle to each locality were alluded to. In very many cases where there was much loss of light, each stray beam is now intercepted and made to pass in a useful direction, at times to intensify a coloured ray, as is the case with the splendid red beam which is sent from the Great Ormes Head Lighthouse, or in adding to the strength of the main light in every instance. Since the period above named, this great firm have set up between 400 and 500 apparatus of every class.

CHAPTER IV.

GENERAL REMARKS.

It is very important that the distinctive character of different Lighthouses, and especially of those near to each other, should be plainly marked, and easily recognised. It might be supposed that this was readily and well done, by the alternation of fixed and revolving, at different periods, flashing or double, and even treble lights; but very numerous accidents demonstrate that mistakes frequently occur. During fine and clear weather there is not any difficulty, with ordinary caution. It is the thick haze, snow and storms, driving scud, and all other embarrassments, which, while they tend to throw doubt on the ship's reckoning, also make it difficult to approach an unknown Lighthouse without running into danger. Therefore, any distinction, by which one light can be instantaneously distinguished from another, is most useful. The difference in the aspect between the reflector and lens light is one of these, at the sailor's command.

At long distances (say above 10 miles) the flash from the revolving light from the reflector has a sensible disc, and will last a considerable time, 12 or 14 seconds, if the revolution is 1 minute; that from the lens light will be whiter, more star-like, and will not last more than 7 or 8 seconds. Another distinction of the latter is, that the light is frequently, but not always totally extinguished between the flashes—the upper and lower zones keeping constantly illuminated. This secondary light, at favourable times, is visible as far as the horizon of the place, and from 8 to 12 miles, according to the size of the apparatus, in ordinary weather. This is a marked distinction between the two systems, as the eclipse is total from the reflectors, even at short distances. But it must be remembered that the holophotal system has also nearly total eclipses.

The distinction between the fixed lights, on either system, is not so well marked. The lens equally distributes the light, which is equally bright in all directions. On the other hand, the reflector light is brightest when immediately in front of the reflector, so that a vessel sailing past, when very distant, will find that the light at times gets fainter, till a short distance further brings her into the force of the next reflector.

Very much has been written upon the comparative merits and economy of the two systems. Perhaps the difference at times has been over-rated. At all events, it is certain, that for fixed lights the advantages are all on the side of the lens, unless the arc illuminated be a small one.

The *harbour* and *tide lights*, so numerous in the ensuing lists, have not been specially alluded to

in the previous description. Where they partake of the catoptric or dioptric character, it will be understood from what has been said; but in many cases of pier, or small tide lights, they are simply the ordinary street gas lamp, with a coloured pane to distinguish it, or even the interior hand-lamp.

In many cases, in our own country, these local lights are not worthy the position they occupy; in others, all improvements of construction and efficiency have been used. In most continental countries, as in France, Spain, &c., these local harbour and tide lights being all under the Government direction, they may all be included in the descriptions before given, as applied to the primary lights.

There is no regular system in the tide or harbour signals used in the United Kingdom; however desirable uniformity may be in this and other respects, the diversity of use is of less importance in practice, as the peculiar character of the signals are given for each place, and will be sufficient guide. More extended directions, in connection with these signal lights, must be found in the special Sailing Directories, and the charts they elucidate.

The distance to which the principal lights are visible is generally limited by the horizon. There is no doubt but that they might be seen to very great distances, even 60, 80, or even 100 miles, if sufficient elevation could be gained to view them from. It is considered by many that 250 feet is the maximum height necessary or advisable, which will give an horizon 18 miles distant; and, by ascending the rigging, to 20 miles off. When a light is unduly elevated it is very liable to be obscured by clouds or fogs, and it is frequently a great detriment to those which are so. In the Tables, the height of the flame above the highest tide high-water level is given, so that it is the minimum range of the light; to this elevation 10 feet is added for the height of the deck of the ship above the sea. Besides the increased distance to which low water will cause the light to be seen, the effect of refraction will also sometimes increase their range.

The height of the tower, from base to summit, is frequently given, as it affords a means, by angular measurement by the sextant, of ascertaining the distance of the tower. In the Tables, where the height of the Lighthouse is given, it is to be inferred that it is from base to vane; but the elevation of the light is that from the summit of high water, and thus the vane above the ventilating ball is of varying height, according to the size of the lantern. Approximatively it is as follows:—

1	Order light, from the centre of the light to the vane, about 15 feet to be added.				
	"	"	"	11	"
3rd	"	"	"	10	"
4th	"	"	"	8	"
5th	"	"	"	7	"
6th	"	"	"	6	"

Many of the Lighthouses are handsome and commanding structures; and, generally, all modern erections are made almost as available for day marks as their lights are for night. In many cases they are distinguished by some peculiarity, noticed in the lists, as mentioned on page 6.

When the light is dipping on the horizon it flickers greatly, especially in rough weather, an effect owing to the waves on the intervening horizon. The lights also appear yellow when in the neighbourhood of large towns, as Liverpool. This is owing to the smoke of the town. Observations on this point is recommended, as distant lights on land appear quite bright and white during and preceding rainy weather; while a yellow or reddish tinge indicate, almost certainly, a continuance or approach of fine weather.

It may readily be comprehended, that if the refinement of economising the light were carried to so great an extent without vertical divergence, the effect would be to send forth the light in such a thin disc that it would be invisible to a distant ship, unless she were exactly on that part of the ocean which this thin disc of light touched; some aberration is, therefore, absolutely necessary.

But this point has also been urged by Mr. Thomas Stevenson (in 1851), as one that might be made useful, as a light might be made to be visible only over a dangerous reef, or in a safe channel. Therefore, a ship approaching such danger would be warned when to put about by its becoming visible, or by losing sight of it. It is said that a light of this character was in use at Beachy Head, but the particulars have not been preserved.

It has frequently happened that a Lighthouse on a perpendicular cliff has not shown the light

to ships passing close underneath, and in some cases with very disastrous consequences. In these circumstances it is almost imperative that the light should have a high degree of divergence in the lower portion of the apparatus. In the beautiful new apparatus for the electric light at the South Foreland low Lighthouse, one-half of the dioptric zones are so inclined as to show the light to a lower angle to accomplish this effect. A very useful application of this has been made in some few Lighthouses (as in Ballycotton, South Ireland), of having the lower panes of the light-room made of red glass, so that a ship approaching too near the land will be warned of it by the light changing to red.

The masking of lights for the purpose of clearing the navigation of different channels is effected in the same way as the ships' quarter-lights are, as is most usefully carried out in Liverpool Bay. A different coloured ray is also most serviceable, as the bright ray from the Maplin, which points out a turn in the channel, or in other cases where the change of colour can be made a beating mark. All these points, however, are familiar to the sailor. In the preceding notices are given only the leading features, sufficient to show what the general principles are as applied to our subject. But it may be affirmed, that almost every variety of circumstance and requirement in the Lighthouse system has been the subject of profound study; and so numerous are the plans and inventions in connection with all branches of them, that the mere enumeration of them would be a bulky list.

The English lights are lit at sunset, and extinguished at sunrise. The Scotch have made a saving by doing so at darkening and dawn. In all cases of the public lights, of all countries, the strictest supervision and most careful management are used to render them in the highest degree efficient.

The ancient Corporation of the Trinity House of Deptford Strond has had, as is well known, the charge of the British Lighthouse system. This is one of the very few institutions (if there be another) which dates from a mediæval period, which has well preserved its importance and useful character, through all changes, to the present day. That it has been so, the last Report of the Royal Commission, 1861, will testify.

"The above evidence then goes to show that the quality of British lights (speaking generally) is equal to the quality of lights in any part of the world; and the testimony is especially valuable because the men who give it are mariners—those best able to judge of the appearance of the light; and, as appears from their evidence elsewhere, generally knowing nothing about the manner in which the light is produced. As one witness remarked, 'They don't know the ropes,' C. and D. (catoptric and dioptric); but most of them think that first-class British lights (speaking generally) are as good as most first-class lights which they have seen abroad, and better than many."

The Trinity Corporation, which has developed our English system, under the advice and assistance of the most eminent engineers and philosophers of all periods, existed in the reign of Henry VII., as a respectable Company of Mariners in the College at Deptford, having authority by Charter to prosecute persons who destroyed sea-marks, &c.; and Henry VIII., in the sixth year of his reign, May 20, 1514, formed them into a perpetual Corporation, by the style and title of the "Master, Wardens, and Assistants of the Guild or Fraternity of the most glorious and undivided Trinity, and of St. Clement, in the parish of Deptford Strond, in the county of Kent."

This Charter was confirmed and altered by Edward VI., Queen Mary, Elizabeth, and James I. The Charter of James I. settled this constitution of the Corporation, and such it continues. The Charter was dissolved in 1647, but was renewed by Charles II. on the Restoration, and the disposal of the funds was settled partly for charitable purposes. The Charter was surrendered to Charles II., and renewed by his successor in 1685; and the charitable uses of the funds of the Corporation were again settled. These funds were derived from various charges, such as pilotage, lastage, loadmanage, ballastage, &c.

The interest which the Trinity Corporation represented having, by the extension of commerce, grown into great magnitude, the Government interfered and altered some of their privileges at different periods, especially in 1854, when the Board of Trade partook of the supervision.

In *Scotland*, the Commissioners of Northern Lighthouses are the acting body, and were incorporated by the Act 38th George III., c. 58. They have had the benefit of the special services of the family of Stevensons, often noticed previously.

In *Ireland*, the Ballast Board of Dublin acts in all Lighthouse matters. (See the 23rd George III., c. 19.)

Besides these three public bodies there are very numerous local authorities which deal with local lights. The principal among these are the Liverpool Board, the Trinity Houses of Newcastle, Hull, &c. The number of these separate bodies is very great; as, for the 402 Lighthouses in Great Britain, there were, at least, 174 different authorities to direct them.

The Colonial lights are chiefly under the control of the Board of Trade.

Like many other important interests, this has suffered from over legislation, as the Chairman of the Commission of 1861 says,—“It is difficult to discover the necessity for that cumbersome system which now exists, viz., a *single government* (the Board of Trade) for Lighthouses in the British possessions abroad; a *double government* for the Lighthouses under the Trinity House; a *triangular government* for the Scotch Lighthouses and for local lights in England; and a *quadrilateral government* for the Irish Lighthouses and for local lights in Scotland and Ireland—a system which can scarcely be expected to find favour in the present day.”

In *France*, the Lighthouse service is under the ministry of Public Works, and a special Commission, called “Commission des Phares,” which body consists of naval officers, marine engineers, hydrographers, members of scientific bodies, and other gentlemen, distinguished for ~~their~~ scientific attainments in various professions, all of which have to do with branches of science connected with coast illumination. The general conduct of the service is under an officer called Directeur Général des Phares, who is an engineer, and has other engineers under him.

In the *United States of America*, the lights are under one Central Board, constituted in 1852, and composed of a member of the Government, engineer, officers, and officers of the army and navy, and civilians of high scientific attainments.

In *Sweden*, the lights are under the Admiralty, and managed by a director and officers who have military rank, and engineers.

In *Norway*, the service is under the Royal Marine Department.

In *Turkey*, it is under the Admiralty; and the system is now in course of development.

In *Spain*, the system of administration is the same as in France; and the full development of the system is now in progress. The lights, &c., are under the department of Public Works, and under a permanent Commission composed of engineers of superior rank of the Corps of Roads, &c., and naval officers; and the captains of ports are instructed to suggest improvements and report on the lights.

In *Denmark*, the service is under the Ministry of Marine.

In *Russia*, the superintendence is dependent from the Hydrographical Department.

In *Holland*, the management of lights, buoys, and beacons, rests with the Minister for the Marine.

In *Belgium*, the construction of Lighthouses is under the Minister of Public Works; but when built they are handed over to the general direction of the Navy, which is under the Minister for Foreign Affairs.

In *Austria*, the superintendence of all the Lighthouses, buoys, and beacons, belongs to the Imperial Royal Admiralty. The Deputies of the exchange, at Trieste, attend to Lighthouses—their erection, management, collection of dues, &c.

In conclusion, an inspection of these most useful monitors to the sailor is recommended to him. He will then see that the beauty of the apparatus, the discipline, order, cleanliness, and perfection of everything connected with them, are not exceeded by their utility.

VISIBILITY OF LIGHTS.

The question of the distance to which lights can be seen is one of great importance to the mariner, and is one attended with some difficulties. In the Tables, the elevation of the focal plane of the light-room above *high* water level is given, and the distance of the sea-horizon due to that elevation, is stated to be the distance it may be seen from the deck of an ordinary vessel, 14 feet above the sea.

This calculation is subject to the ever-varying amount of refraction; and, therefore, this distance is the *minimum* to which it ought to be distinctly visible in ordinarily clear weather.

But from the very great power of the larger light apparatus, the range is so great, that, under favourable circumstances, and from great elevations, as from the mast-head, or from a distant hill, they would be clearly visible at 60 or even 100 miles distance; and the greater the distance, the more it is affected by refraction at the small angle it subtends with the visible horizon. It must be sufficient here, then, to state that the ranges given are the *shortest* distance to the point where the light will dip below the ship's horizon.

The following Table, given in the grand work on the Skerryvore Lighthouse, by Alan Stevenson, Esq., will give the elements of these calculations, and may prove serviceable in other circumstances than those to which the Tables can only refer.

TABLE.

Distances at which objects can be seen at sea, according to their respective elevations and the elevation of the eye of the observer.

Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.	Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.	Height in Feet.	Distance in Statute or English Miles.	Distance in Geographic or Nautical Miles.
5	2.958	2.565	70	11.067	9.598	250	20.916	18.14
10	4.184	3.628	75	11.456	9.935	300	22.912	19.87
15	5.123	4.443	80	11.832	10.26	350	24.748	21.46
20	5.916	5.130	85	12.196	10.57	400	26.457	22.94
25	6.614	5.736	90	12.549	10.88	450	28.062	24.33
30	7.245	6.283	95	12.893	11.18	500	29.580	25.65
35	7.826	6.787	100	13.288	11.47	550	31.024	26.90
40	8.366	7.255	110	13.874	12.03	600	32.403	28.10
45	8.874	7.696	120	14.490	12.56	650	32.726	29.25
50	9.354	8.112	130	15.083	13.08	700	35.000	30.28
55	9.811	8.509	140	15.652	13.57	800	37.416	32.45
60	10.246	8.886	150	16.201	14.22	900	39.836	34.54
65	10.665	9.249	200	18.708	16.22	1,000	41.133	36.28

EXPLANATION OF THE TABLES.

—o—

NAME AND CHARACTER OF LIGHT—First Column.

The principal coast lights are given in capitals, as **N. FORELAND**. Secondary lights in smaller characters, as *Shoreham Harbour*. Tide lights in italics, as *Ramsgate*. The character of the light follows its name.

—

GEOGRAPHICAL POSITION—Second Column.

The latitudes and longitudes here given are presumed to be accurate, within less than 1', for all the coasts of the Atlantic Ocean and its Seas. In other parts of the world it may vary somewhat more; but there is no great discrepancy, such as would lead to serious consequences, by taking any one of them as a point of departure.

—

DESCRIPTION OF THE LIGHT, &c.—Third Column.

In this, any peculiarity of the light, or period of a Tide light, is noticed; and also the direction of double lights. In many cases the bearing of two lights when in one will lead clear of a danger, as the South Foreland in one, W. by N., clears South end of the Goodwin, &c. Special directions will explain this. The limits of visibility of the lights are given by compass bearings *from* the light, and not those from seaward.

—

DESCRIPTION OF APPARATUS—Fourth Column.

In this, the signs used to indicate the sort of light apparatus in use in each case:—

- signifies a catoptric, or reflector light.—(See page 14, &c.)
- 1a, 2, 3 b, &c., indicate dioptric, or lens lights, the figure showing the order or size, 1st, 2nd, 3rd, to 6th order.—(See page 19.)
- a, a fixed lenticular light.—(See page 21.)
- b, a revolving lenticular light.—(See page 25.)
- c, a fixed and flashing light.—(See page 23.)

These figures and letters will serve to explain the peculiarities of the Lenticular System, as in operation therein.

—

HEIGHT ABOVE HIGH WATER.—Fifth Column.

This gives the height of the *flame* in feet above the highest tide level, consequently it is its minimum height, and is increased by the tidal range of the place. The height of the Lighthouse itself, from base to summit, is given sometimes in the third column.

—

VISIBLE IN MILES—Sixth Column.

This gives the minimum distance to which the light can be seen, in clear weather, from a height of 10 feet above the sea level. But in the case of the principal lights this but imperfectly represents their range, as they could be seen at any distance attainable by increased elevation. In the use of *coloured* lights this range is given according to their presumed power.

—

YEAR ESTABLISHED—Seventh Column.

The date of the first exhibition of the light is usually given; but its character, &c., may have been frequently changed in the interval.

LIGHTHOUSES.

1879.

ENGLAND.

Thames Mouth.

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RIVER THAMES Northfleet	.....	Bright light in fairway of Northfleet Hope and Gravesend Reach; red over anchorage in Gravesend Reach and Broadness..	●	..	..	1869
Hope Point Fort	.....	A single lamp for colliers.....	..	..	..	1852
Mucking Flat	.....	On piles; bright East of N.E. by E., red to W.; also red ray toward Blyth buoy to S. $\frac{1}{4}$ E., and red N. of E.S.E. to clear Scars and Chapman Head. Fog Bell	2a	40	11	1849
Chapman Head	.....	On piles. Bright in fairway channel, red over Leigh Middle to N. of S.E. by E. $\frac{1}{4}$ E. A fog-bell	2	40	11	1849
Southend Pier-head	.....	Red fixed light.....	..	..	..	1840
Sheerness	.....	Red gas lt. on N.W. face of fort on Garrison Point. Not vis. S. of N.N.W. bearing .....	..	60	5	1859
Queenborough	.....	1. Two red leading lights on pier..... 2. A bright lt., vis. through 45°, is shown from beacon on Queenborough Spit, in 6 ft. water, 80 yds. S.W. from Spit buoy	6a	30	5	1876 1876
Whitstable	.....	Bright fixed light on tall chimney	●	56	9	1850
NORE LIGHTVESSEL One br. rev. lt. $\frac{1}{4}$ min.	51 29. 0 48.	In 3 $\frac{1}{2}$ fathoms at East end of the Nore Sand. Gong; warning gun	●	38	10	1732
Girdler Lightvessel One br. rev. lt. $\frac{1}{4}$ min.	51 29. 1 7.3	In 3 $\frac{1}{2}$ fathoms W. Girdler Sand at W. entrance of Princes Channel. Gong; warning gun...	●	38	10	1848
Princes Channel Lt.-ves. One red rev. lt. 20 secs.	.....	In 3 $\frac{1}{2}$ fathoms N. side of channel, between Girdler and Tongue Lightvessels, Gong; warning gun.....	●	38	10	1856
Tongue Lightvessel Upper br., lower red, fixed lights	51 29. 1 19.	In 10 fms. at East Tongue Sand; one red ball. Lts. at unequal heights. Gong. Warning-gun. (Run into and sunk in July, 1877. Wreck marked by lt.-ves., $\frac{1}{2}$ cable N.N.E. from it, and buoy S.S.W. from it. Keep outside buoy and lightvessel)	●	38 14	10 4	1848
Margate Pier One red fixed light	51 24. 1 23.	Column at W. end of Pier; also a small green light on Jarvis Jetty	●	85	10	1829
Mouse Lightvessel One green rev. lt. 20 s.	51 32. 1 0.	In 4 fathoms, at West end of Sand. Gong; warning gun.....	●	38	10	1838
Maplin Lighthouse One red fixed light	51 35. 1 3.	Painted red; lt. not vis. over the sand; a br. ray to S. $\frac{1}{4}$ W. betw. Girdler Lt. & Shivering Sand buoy. Br. lt. shown 13 ft. below main lt. to S.E. by E. $\frac{1}{4}$ E. over Spit buoy. Fog-bell	2a	36	10	1838
Swin Middle Lightvessel One br. rev. lt. 1 min.	51 36.5 1 5.5	In 3 $\frac{1}{2}$ fathoms at West end of Sand. Gong; warning gun.....	●	38	10	1837
Gunfleet Pile Lighthouse One red rev. lt. $\frac{1}{4}$ min.	51 45.8 1 20.	On S.E. side of Sand; keep $\frac{1}{4}$ mile off, and do not pass to North. Fog-bell	●	41	10	1850

All the Lightvessels belonging to the Trinity House, and those of Ireland, show a bright riding lt. on the fore-stay, at a height of 6 ft. above the rail, to show the direction in which she is riding. Should the vessel drive from her proper position, she will only show a fixed red lt. at each end of the vessel, and a red flare every quarter of an hour.

WRECK LIGHTVESSELS are painted green, and carry two balls by day, or lights by night, on that side of them on which it is safe for vessels to pass. On the side of the lightvessel where the wreck is situated, only one ball or light is shown. No riding light is carried on the forestay of these lightvessels.

Lighthouses.

D

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Sunk Lightvessel One rev. light, 45 secs.	51 49.6 1 31.1	In 9½ fathoms; red and bright flash alternately; half ball above ball. Gong; warning gun	●	37	10	1802
Kentish Knock Lt.-vessel One br. rev. lt., 1 min.	51 41. 1 41.	Has two red balls vertically. In 11 fathoms on E. side of Sand. Fog-horn 5 secs. ev. min.	●	37	10	1840
GALLOPER LIGHT-VES. Two bright fixed lights	51 45. 1 56.	In 20 fathoms on S.W. side of Shoal; lights horizontal. Gong; warning gun	●	36	10	1803
NORTH FORELAND One bright fixed light	51 22.5 1 26.8	White tower 85 ft. high. A strip of red light to E. end of Margate Sand, between N. ½ E. and N. by W. ½ W.	1a	188	19	1636
Ramsgate, Tide Lights 1. Red or green light on West pier 2. Green lt. on W. cliff 3. Green lt. on E. cliff 4. Sparkling lt. 10 secs., on East pier	51 19.7 1 25.4	1. Red lt. while more than 10 ft. in entrance, or from 2½ h. before, and ¾ h. after high water; changed to green lt. when less than 10 ft. 2. Green lt. in one with W. pier lt. leads through Old Cudd Channel 3. Green lt. in one with ditto leads through Ramsgate Channel 4. Visible 5 secs., invisible 5 secs.	4a	38	7	....
GOODWIN LT.-VESSEL One br. rev. lt. 1 min.	51 19.4 1 35.5	Off N. end of the Goodwin Sands, in 10 fms. Lt. shows 3 flashes in quick succession, and is obscured for 36 secs. in ev. min. Three masts & balls by day. Gong. Warning-gun	● ..	36 ..	8 ..	1793 1876
EAST GOODWIN LT.-V. One green rev. lt. 15 s.	51 13. 1 36.4	About 1½ mile to the eastward of the Goodwin Sands, in 30 fathoms. Half diamond over diamond at mast-head. Gong; warning gun	●	37	..	1874
GULL STREAM LT.-VES. One br. rev. lt., 20 secs.	51 16.5 1 30.	On the West side of the Goodwin Sands, in 8 fathoms. Gong; warning gun	●	36	10	1809
S. SAND HEAD LT.-VES. One bright fixed light	51 9.2 1 28.2	Off the South end of the Good. in Sands, in 14 fathoms. Fog-trumpet 5 secs. every 2 min.	●	34	10	1832
Deal Iron Pier	.....	Red light on pier head .....	..	..	..	1865
SOUTH FORELAND Two ELECTRIC FIX. LTS.	51 8.4 1 22.4	In one W. by N. 1,347 ft. apart; in one, clear S. of Goodwin. High lt. cut off on a S.W. by S. bearing. Magneto-electric apparatus	3a 3a	372 275	26 23	1793 1842
DOVER Admiralty Pier Fix. & fl. br. lt. 7½ s.	51 6.5 1 19.	Red tower, 30 ft. high, on end of Admiralty Pier. Fog Bell ev. 7½ secs. ....	♦ ..	.. ..	.. ..	1842 1862
Dover Harbour One green light Red Tide Lights	.....	One red lt. on N. pier while 7 ft.; one red lt. on S. pier while 7 to 10 ft.; two red lts. while above 10 ft. The green lt. at the W. side of entr. to Granville Dock	6c	44	6	1876
Folkestone Tide Lights 1. Red and bright lts. 2. Green light	51 4. 1 11.6	1. On S. pier head a red light while 10 ft.; a white light below it when above 16 ft.; when red lt. is blinked occasionally use caution ... 2. On new pier a green light seaward, but white inshore of danger Fog Bell	● 5a	37 31	6 ..	1810 1860
VARNE LIGHTVESSEL One red rev. lt. 20 secs.	50 56.3 1 18.3	In 16 fathoms at West end of the shoal. Gong. Warning-gun	●	38	10	1800
DUNGENESS 1. One fixed light 2. One br. flash. lt. ev. 5 secs.	50 54.8 0 58.3	1. Tower with red and white belts, 240 yds. from extr. of point. Red lt. over W. anchorage northward of W., and red lt. over E. anchorage W. of N.E. by E. ½ E. 2. New tower on extr. of pt. S.S.E. ½ E. 675 ft. from main lt. Fog-horn 5 secs. ev. min.	1a ..	92 28	16 ..	1791 1861 1867 1875
Rye Tide Lights 1. Two bright fixed lts. 2. Two red fixed lights. 3. One green fixed light	50 57. 0 44.	1. Camber, on N. side of the entrance while 10 feet; in one N. ½ W. 2. Near old pier head from half flood to half ebb 3. West entrance to harbour half flood to half ebb .....	.. .. ..	26 16 32	4 3..	....

Name and Character of Light.	Lat. N. Long.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
	Long. E.					
Hastings	50 52.	On West Hill, in one, N.N.E., 508 ft. apart, to direct the fishermen (Sept. 29 to Mar. 25)...	..	60	7	....
One bright, one red lt.	o 36.	A green light on the pier.....	..	30	4	....
R. SOVEREIGN SHOALS	50 42.8	In 12 fms., S. Ely, 2 miles from R. Sovereign buoy. Shows 3 flashes in 23 secs., at intervals of 37 secs. Small ball over usual mast-head ball. Gong. Warning-gun.....	..	36	10	1876
One revol. br. lt. 1 min.	o 26.7					
Eastbourne	.....	A green light is shown on the pier, and two red lights on the beach.....	..	..	..	....
BEACHY HEAD	50 44.2	A white lighthouse, 47 ft. high, on summit of Belletout Cliff. From the eastward the lt. will open when bearing N.W. $\frac{1}{2}$ W., and by keeping it so will lead $1\frac{1}{2}$ mile outside Royal Sovereign Shoals	●	285	22	1828
One br. rev. lt., 2 min.	o 12.9					
Newhaven	50 47.	On West pier-head. Tide lt. below main lt. red betw. 10 and 13 ft., bright betw. 13 and 15 ft., and green above 15 ft.	●	28	8	....
One br. fix. lt. and Tide Light	o 4.		..	17	7	....
Green light on E. pier						
	Long. W.					
Brighton Chain Pier	50 49.	One green fixed light .....	..	35	10	1824
" Pile Pier	o 8.	One red fixed light.....	..	..	5	....
Shoreham Harbour	50 50.	Tide lt. on central pier, green while 8 to 11 ft., bright while 11 ft. and over, and red at high water; bears S. by W. $\frac{1}{2}$ W. from upper lt. Two green lts., one on E., one on W. pier-head. Approaching, keep high br. lt. open E. of W. pier green lt., and when clear of W. pier-head, keep near the pier until high lt. and tide light come in line	4a	42	10	1825
One bright fixed light, and Tide Light	o 15.		..	23	..	....
Two green lights						
Worthing Pier	.....	Fixed light on the pier.....	..	..	..	....
Littlehampton	50 48.	Also tide lts. on S. end of pier; white 10 feet, green 11 ft., red 12 ft., red & white 13 ft., two white 14 ft., white & green 15 feet, till H.W.	●	30	9	1848
Red lt. on E. pier, N. end	o 32.					
OWERS LIGHTVESSEL	50 38.7	On the S.E. end of the Owers Shoal, in 19 fms. Flashes twice bright, once red. Fog Trumpet 6 blasts every minute. Warning Gun	●	38	10	1788
One revolving lt. $\frac{1}{2}$ min.	o 39.9					
Nab Lightvessel	50 42.2	Near New Grounds; must be passed to eastward. Gong; Warning Gun	●	38	10	1812
Two bright fixed lights	o 59.3		..	28	8	1865
ST. CATHERINE'S PT.	50 34.5	Stone tower, reduced in height in 1875. Lt. vis. between E. $\frac{1}{2}$ S. and N.W. $\frac{1}{2}$ W. Fog Trumpet, 2 blasts every 4 minutes	1a	134	17	1840
One brilliant fixed light	i 17.8					
Warner Lightvessel	50 43.8	In 13 fms., on the eastern part of the sh. al. Gong; Warning Gun	●	38	8	1854
One br. rev. lt. 1 min.	i 4.					
Ryde Pier	.....	A bright fixed light	5a	21	12	1852
SPITHEAD	.....	Green lt. on fort at Brading Haven; red lt. on fort on No Man's Land; white lt. on fort on Horse Sand; red lt. on fort on Spit Sand ...	..	..	..	....
Stokes Bay Pier	.....	Red lights on East and West ends .....	..	..	..	1865
Southsea Castle	50 46.6	Shows red in channel between Spit Refuge Buoy and Horse Fort, or to betw. S. by W. and S.W. by S. It is green to West of the Spit Buoy betw. S.W. by S. and W. $\frac{1}{2}$ S. ...	●	51	9	1822
One red fixed light	i 5.2					
Southsea	.....	Two red lights on Clarence Esplanade Pier ...	..	..	..	1869
Portsmouth Dockyard	.....	On S. end of S. railway jetty. Shows red betw. the eastern side of the harbour and S.E. tangent of Block House fort, and green westward of that line. Harbour railway works will be cleared by keeping in green light ...	..	..	..	1878
One fixed red or green light						
SOUTHAMPTON WATER						
Calshot Lightvessel	50 48.	Off Calshot Castle, in $3\frac{1}{2}$ fathoms. Gong; Warning-gun	●	32	9	1842
One br. rev. lt., 1 m.	i 16.					
Netley Pier	.....	One fixed green light to be shown .....	..	..	..	1878
Southampton	50 53.7	1. On either side of entrance to Docks. In one N.N.E. $\frac{1}{2}$ E. lead up River Itchen in 15 ft....	..	..	..	....
1. Two fixed red lts.	i 24.4	2. On Extension Quay, N.W. side of R. Itchen	..	..	..	1876
2. Two fix. green lts.		3. From Harpy lt.-ves., at entr. of Riv. Itchen	..	..	..	1877
3. One fixed red lt.		4. From iron posts on Royal Pier, 15 yards apart. In one lead up channel .....	..	..	..	1841
4. Two fix. bright lts.						

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Yarmouth Two fixed lights	.....	Green outer lt. near castle wall; inner br. lt. in one S.S.W. lead into the harb. Temporary lt. on end of wooden pier constructing	..	12	..	1857
Needles Outer Rock One fixed bright, or red light	50 39.7 1 35.5	Shows red to S. from S.E. $\frac{1}{2}$ S. to W.; then bright over entrance of Needles Channel to W.N.W.; thence red up the channel to N.E. by E., and then bright to N.E. by E. $\frac{1}{2}$ E., to clear Warden Ledge. A bell in fog	1a	80	9	1859
Hurst Beach Two bright fixed lights (Low lt. in New Fort)	50 42.4 1 32.9	In one N.E. by E. $\frac{1}{2}$ E., 670 feet apart. Another light in the lighthouse shows only up the Solent	●	66 46	12 11	1812 1866
Poole Two red lights	50 41. 1 58.	In one, N. $\frac{1}{2}$ W., 786 feet apart on North side of entrance; also four lights inside	●	37 16	6 ..	1848
Weymouth Two red, two green lts.	50 37. 3 26.	Two red lts. near beach, E. of railway station Two green lights on North pier	..	..	..	....
PORTLAND High lt., br. and fixed Low lt., br. and fixed	50 31.3 2 27.3	White towers, 50 & 85 ft. high, 1,509 ft. apart, near the Bill. In one, N.W. by N., lead betw. Race and Shambles. Low lt. only shown between N.W. by N. $\frac{1}{2}$ N. and E.S.E.	1a 1a	210 136	21 18	1716 1789 1867
Portland Breakwater One fixed red light	.....	Shown from centre of fort at end of Breakwater. Lt. obscured by peninsula between S.S.W. & W. by S. $\frac{1}{2}$ S., & betw. W. by S. $\frac{1}{2}$ S. & W.N.W. lt. is obscured to an observer 15 feet above the sea when within 2 miles of Chesil Bank. Fog Bell	●	51	8	1851 1876
Shambles Shoal Lt.-Ves. One fixed light	.....	On E. end of shoal, in 15 fms. Fog Horn, 1 blast every 2 min. Warning Gun	●	38	10	1859
Lyme Regis Two red lights	50 43.5 2 55.9	In one, N.W. $\frac{1}{2}$ N., 825 ft. apart. A bright leading light in centre of channel, N. $\frac{1}{2}$ W.	..	11 21	4 ..	1853
Teignmouth Two red fixed lights	50 32.6 2 29.6	One on a limestone tower on S.W. end of Denn; the other on a house	●	34	4	1845
Brixham One red one green light	50 24. 3 30.	Red lt. at end of breakwater. Green lt. at end of W. pier. Entering by night, keep N. of Shoalstone Point to open red lt. on inner pier, which leads clear of breakwater	●	20	6	1839
Torquay One red, one br. fix. lt.	50 27.5 3 31.	Bright light on inner pier, showing red to westward; red light on outer pier	..	15	5	1852 1870
Dartmouth 1. One fixed bright red or green light 2. One bright fix. lt. 3. One small bright, red, or green light	50 20.3 3 33.2	1. On Kingswear or N. side; br. lt. towards fairway, between S. $\frac{1}{2}$ E. and S. by E. $\frac{1}{2}$ E.; thence red lt. to the land, and green lt. to S.W., between S. $\frac{1}{2}$ W. and the land, or over Checkstone, Pin Rock, &c. 2. S. $\frac{1}{2}$ E. 110 ft. from former; in one leads up fairway 3. Near Coast-guard Station; br. in fairway, red over shoals on N. side of harbour, and green lt. over shoal of One Gun Point to S.	..	85	11	1864
START POINT One brilliant revol. lt., visible every minute	50 13.3 3 38.5	A white tower, 92 ft. high. A fix. lt. at 181 ft. is also vis. from tower over Skerries Rocks betw. N.E. $\frac{1}{2}$ E. and E. $\frac{1}{2}$ N. Fog Horn, 1 blast every 3 minutes	1a	204	20	1836
Plymouth Breakwater One bright or red light Lower bright light	50 20.4 4 9.5	On W. end; red to seaward, but br. E. of N.E. $\frac{1}{2}$ E. from lt. A lower br. lt. is seen when the channel is open. A bell during fogs	2a	63 48	9 ..	1844
Plymouth Harbour One bright, two red lts.	50 22. 4 7.	On W. Barbican pier-head is shown a br. lt., a red lt. on Millbay pier-head, & also one at Mt. Wise landing. Fog-bell, 8 strokes a min.	●	29	6	1822
EDDYSTONE One brilliant fixed light	50 10.8 4 15.9	An admirable stone tower, with red and white bands, 89 ft. above foundation on the rock, which covers 14 ft. at high water. Fog-bell, 5 strokes once in every 4 minute	2a	72	13	1759
Falmouth One rev. lt. 20 secs. Lower fixed light One green fixed light	.....	On St. Anthony Pt. The lower lt. to S.S.W. over Manacles Rocks, between S.S.W. $\frac{1}{2}$ W. and S. by W. $\frac{1}{2}$ W. Fog-bell struck 4 times in every alternate 4 minute On Prince of Wales breakwater	●	72 35	12 10	1835 1865 1860

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LIZARD Two brilliant fixed lts.	49 57.6 5 12.1	Two white towers, each 61 ft. high, W. by N. & E. by S., 223 ft. apart, on the Lizard Cliff. In one lead clear of the Manacles. A signal and telegraph station on Beast Point, about $\frac{1}{2}$ of a mile to E. Fog-trumpet, 1 blast every 5 minutes	●	229	20	1751
WOLF ROCK One rev. lt. 30 secs.	49 56.7 5 48.2	A noble granite tower. Flashes red and white alternately. Fog Bell, 3 strokes ev. $\frac{1}{4}$ min.	1b	110	16	1870
<i>Penzance Tide Light</i> A fixed red or br. light, while 15 ft. inside; green while less	50 7. 5 31.	On the S. pier-head. Shows red to E. by S. $\frac{1}{2}$ S. to S. by W. $\frac{1}{2}$ W. The remainder a bright light. By day, a ball while 15 feet	5a	33	9	1817
LONGSHIPS One fixed light	50 4. 5 44.7	New tower, 1873. White lt. seaward, from N.N.E. $\frac{1}{2}$ E., or $\frac{1}{4}$ mile W. of Brissons Rocks, to S. by E., or $\frac{1}{4}$ mile W. of Runnelstone; red in-shore of these bearings. Fog-bell 2 strokes ev. $\frac{1}{4}$ minute	1a	110	16	1795
SEVEN STONES LT.-VES. Two bright fixed lts.	50 3.2 6 5.3	On E. side of rocks, in 40 fms.; two red balls; Warning-gun; powerful Fog-horn ev. 10 secs. or Gong. To be altered in summer of 1879 to rev. lt., showing 3 flashes once in ev. min.	●	20	10	1841
SCILLY One bright revol. light every minute	49 53.5 6 20.7	A white tower, 74 feet high, on the summit of St. Agnes' Island; obscured by islands from N. by E. to East	●	138	16	1680
BISHOP ROCK One fixed bright light	49 52.5 6 26.6	On the S.W. rock. A noble stone tower, 147 feet high. Invisable to eastward between N.E. by E. and E. by S. $\frac{1}{2}$ S. Bell ev. 10 secs.	1a	110	16	1853
<i>St. Ives Tide Light</i> 1 br. fix. lt. while 10 ft.	50 12. 5 28.	On the pier head. Lighted from Sept. 1 to April 30. Also a red light on end of outer wooden pier	●	23	7	1831
<i>Hayle Tide Lights</i> 1. Two fixed bright lts. 2. One fixed red light	50 11.5 5 26.	1. On W. side of entr.; in one S.S.W. $\frac{1}{2}$ W., 297 ft. apart, while 12 ft. water..... 2. On jetty of Lelant Quays	●	81	6	1840
GODREVY One br. flash. lt., 10 secs. Lower red light	50 14. 5 24.	On the island. A bell in fogs. Lower red lt. to N.W. over the Stones Rocks, between N.W. and N. by W.	1c	120	15	1859
Padstow	.....	A red or green light on quay head .....	..	..	..	1868
TREVOSE HEAD Two bright fixed lights	50 32.9 5 2.1	The lower light is 60 feet to seaward of the upper	1a	204	20	1847
BRISTOL CHANNEL.						
HARTLAND POINT One rev. lt., $\frac{1}{2}$ min.	51 1.4 4 31.5	New tower, showing at intervals of 30 secs. two bright and one red flash. Fog-Horn 5 secs. in every 2 min.	1b	120	16	1874
LUNDY ISLAND Upper lt., rev. ev. 2 m. Lower fixed light	51 10.0 4 40.3	In one tower, 96 ft. high. Low light visible to W. between N.N.W. and W.S.W. Rocket every 10 min. in fogs	1b	540	31	1820
<i>Bideford</i> Two bright fixed lights	51 4. 4 12.	On Braunton Sands, North side of entrance. In one, S.E. $\frac{1}{2}$ S., lead over bar; from half flood to half ebb	●	86	14	1820
BULL POINT	.....	Lt.-ho. to be completed during the summer of 1879, and will show triple flash. lt. ev. $\frac{1}{4}$ min. A lower red fix. lt. will be shown over Morte Stone. Fog-trumpet, to give 3 blasts once every 2 minutes .....	..	..	..	....
Ilfracombe	.....	One red light on Lantern Hill	●	127	7	....
<i>Watchet Breakwater</i>	.....	Tide light fixed, 8 ft. flood to 10 ft. ebb .....	..	30	4	1862
Burnham, or Bridgewater Up. lt. intermit. 4 min. Lower light fixed	51 14.9 2 59.9	In one, E. by S. $\frac{1}{2}$ S., 1,500 ft. apart. Low lt. bright, visible westward from W. by N. to N.W. by W. $\frac{1}{2}$ W.; a red lt. from low tower shows over the bar from W. by N. to W. $\frac{1}{2}$ N.; and a red lt. up the river from S. by W. to S. by W. $\frac{1}{2}$ W.	●	91	16	1832

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Clevedon	.....	Red light on pier-head .....	..	27	5	1869
Portishead	.....	Bright light on pier .....	..	..	..	....
Breaksea Lightvessel	51 19.8	In 8 fms. 2 miles W. by N. $\frac{1}{2}$ N. from One-	●	38	10	1866
One br. rev. lt. 15 secs.	3 17.6	fathom Bank buoy; one ball; red lt. shown	..	14	7	....
One red fixed light		from after part. Gong; signal gun.....				
Avon	51 30.	White tower, 65 ft., on the E. side of channel.	2a	70	13	1840
One bright fixed light	2 42.2	a red sector to N.W., and a green ray from				
		W. to W. by S. at turn of channel				
English & Welsh Grounds	51 26.5	On S. side of Bristol Channel, in 14 fathoms; a	●	38	10	1838
Lightvessel	2 58.	red ball, gong, gun, &c.				
One br. rev. lt. 1 min.						
New Passage	.....	Lights on pier and Charstone Rock for railway	..	..	..	1863
		steamers.....				
FLATHOLM	51 22.5	On South point. Light is red from S. $\frac{1}{2}$ E. to	1a	166	18	1737
One bright or red light	3 7.	N. by W. $\frac{1}{2}$ W.....	..	..	..	1839
Briton Ferry	.....	North side of dock entrance; red light when	..	..	..	....
		passage is clear; green light when not open				
Usk, Newport	51 32.	West side. Light bright in channel, red over	..	30	10	1821
One bright or red light	3 3.	Welsh Grounds and Welsh Hook; bright	..	..	..	1868
		North to land; bright up river				
Cardiff	51 27.8	About 23 yards apart. One on pier-head .....	..	..	..	1866
Two red fixed lights	3 9.7					
NASH POINT	51 24.	White towers 1,000 ft. apart, S.E. by E. $\frac{1}{2}$ E.,	●	167	18	1831
Two bright fixed lights	3 33.	and N.W. by W. $\frac{1}{2}$ W. ....	..	122	16	....
One red light		Red light from high lighthouse from N.W. by				
		W. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ W.....				
Portcawl	.....	On ends of breakwater	5a	34	11	1866
One br., two red tide lts.						
Swansea Harbour	51 37.	1. White tower on W. pier-head; shown while	..	24	9	1803
1. One red fixed tide lt.	3 56.	8 ft. water. Fog-bell; black ball by day ...				
2. One fixed bright lt.		2. Additional bright lt. shown 450 yds. from				
3. Two green or red lts.		extreme of W. pier, visible only to eastward				
4. Two green or red lts.		3. At South dock, vertically				
		4. At North dock, horizontally, red when				
		closed, green when open				
Scarweather Sand Lt.-V.	51 26.9	Off W. end of Sand, in 14 fms. A half globe	●	38	10	1862
One red rev. lt., 20 secs.	3 55.1	above usual globe. Fog-trumpet, 2 blasts				
		once in every 2 minutes. Signal Gun				
Mumbles	51 34.	A white tower. 56 ft. high, adjoining the fort	a	114	15	1798
One bright fixed light	3 58.2					
Helwick Lightvessel	51 31.	In 16 $\frac{1}{2}$ fathoms, off W. end of Sand. Fog-horn	●	38	10	1846
One br. rev. lt. 1 min.	4 24.	5 secs. ev. 2 min. Warning-gun.....				
Llanelly	51 40.	One on Whiteford Point (on piles) from $\frac{1}{2}$ flood	●	36	7	1850
Two fixed Tide lights	4 10.4	to $\frac{1}{2}$ ebb; from $\frac{1}{2}$ flood to $\frac{1}{2}$ ebb on S. end of	..	55	9	1854
		breakwater				
Burry Port	51 41.	Near head of W. pier while 10 feet water	●	35	9	....
One fixed tide light	4 15.					
Saundersfoot, South Pier	.....	One red light or yellow ball while 8 feet.....	..	15	..	....
Tenby Pier Head	.....	One red tide light for steamers, &c.....	..	14	3	1866

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CALDY ISLAND One br. or red fixed lt.	51 37.9 4 40.9	The lt. is bright seaward, but is red toward Old Castle Head, from N. 70° W. to N. 56° W., and is red over Woolhouse Shoal from N. 55° E. to N. 15° E.	1a	210	19	1829
MILFORD HAVEN						
ST. ANN'S POINT Two bright fixed lts.	51 40.9 5 10.5	White towers, 75 and 42 ft., 610 ft. apart, on W. side. In one N. by W. $\frac{1}{2}$ W., lead in clear of Crow and Toes Rocks. A red ray from high lighthouse shows over Chapel and Harbour Rocks to between S.E. $\frac{1}{2}$ S. and E. $\frac{1}{2}$ S. Fog Horn, 1 blast every 3 minutes	● 1a	192 163	19 17	1714 1841
Great Castle Head Two bright fixed lts.	.....	In one, N.E. by E. $\frac{1}{2}$ E., lead in mid-channel .....	..	112 76	..	1870
Pembroke Dockyard	.....	Two red lts. in one lead up. High lt. shown betw. W. by N. $\frac{1}{2}$ N. & N.W. $\frac{1}{2}$ N. Low lt. betw. W. by N. $\frac{1}{2}$ N. & N.N.E. A green sector betw. N. $\frac{1}{2}$ W. and N. by W. $\frac{1}{2}$ W. is shown over Carr Spit	6a	48	5	1862 18.8
Neyland Pier	.....	Bright light near end of landing pier; red lt. occasionally on railway pier .....	..	..	..	1868
SMALLS One bright (or red) fix. light	51 43.3 5 40.1	Granite tower, 141 ft., red & white bands. Lt. bright seaward, from E. $\frac{1}{2}$ S. to S.E. $\frac{1}{2}$ E. The lt. is red over Hats and Barrels Rocks. Bell sounded, and rockets to explode sent up ev. half hour in fogs	1a	125	16	1778 1861
SOUTH BISHOP ROCK One br. rev. lt. 20 secs.	51 51. 5 25.	A white tower, 36 feet high. A Gong in fogs. Fog-trumpet proposed	1b	144	18	1839
New Quay One bright fixed light	52 12.9 4 21.8	On pier-head. To southward of E. $\frac{1}{2}$ S. the light is red .....	..	..	..	....
CARDIGAN BAY LT.-V. One rev. red lt. 30 secs.	52 24. 5 0.	In 35 fathoms, at 20 miles northward from Port Cardigan Gong	●	40	9	1860 1870
Aberystwith One fixed light Two bright fixed lights	52 25. 4 50.	Harbour entrance, lt. red to S. and W., bright to N.W. and N.E. Two lts. in a field, over inner end of harbour, while sufficient water .....	..	..	..	....
St. Tudwall Roads 1. One br. and red lt. 2. One lower red lt.	52 47.7 4 28.0	1. Vis. 8 secs., obscured 2 secs. White to westward betw. N. by E. and S. by W. Red from S. by W. to S.E. White from S.E. to N.E. by E. $\frac{1}{2}$ E., and thence red to N. by E. Obscured by East Island, betw. N.E. $\frac{1}{2}$ E. and E. by N. $\frac{1}{2}$ N. 2. A ray with an arc of 15° is shown over Carreg-y-trai, from E. by S. to E. $\frac{1}{2}$ N., from window 16 ft. below main light .....	..	151	8	1877
BARDSEY ISLAND One bright fixed light	52 45. 4 47.9	A square white tower, 99 ft. high. Fog Horn, 1 blast every 3 minutes	1a	129	17	1821
Llanddwyn Point	.....	A red light all night	●	50	5	1845
Caernarvon	53 8. 4 24.7	One bright light on pier-head .....	●	..	..	1858
CAERNARVON BAY LT.-VESSEL One rev. light 20 secs.	53 5.8 4 44.2	In 30 fathoms, at 12 $\frac{1}{2}$ miles S.S.W. $\frac{1}{2}$ W. of South Stack light-ho. Flashes bright, bright and red. A small ball over large one. Fog Horn, 1 blast every 3 minutes	●	38	10	1869
SOUTH STACK ROCK One br. rev. lt. 1 min.	53 18.4 4 41.9	White tower, 84 ft. During fogs, a smaller br. revol. lt., at 40 ft., is shown at 30 yds. N. of lt.-ho. A Fog-bell once ev. 15 secs.; also Gun (experimental, with holophone mouth-piece) fired ev. 10 min. from North Stack	●	201	19	1809
Holyhead 1. One red flash. lt. 7 $\frac{1}{2}$ s. 2. One bright fixed lt. 3. One small red light 4. Red and green lights	53 18.8 4 37.1	1. Lighthouse on new breakwater. Fog Bell 3 times every 15 secs. Fog Horns for mail packets at 11 a.m. and 11.30 p.m. 2. On end of wooden jetty; old harbour Bell. 3. On old tower, to N.E., shown from N.E. to N.N.E. $\frac{1}{2}$ E. to clear Platters. Fog Bell 4. Red lt. on starboard; green lt. on port side of inner harbour .....	.. 6a	66 20	13 ..	1873 1864
SKERRIES One bright fixed light Lower red light	53 25.2 4 36.4	Upper lt. not visible over East Platters Rock, from S.S.E. to S.E. $\frac{1}{2}$ S. Red lt. over Ethel and Coal Rocks, from E. $\frac{1}{2}$ S. to E. by N. $\frac{1}{2}$ N. Fog Horn, 1 blast every 3 minutes	1a ..	117 67	15 10	1803 1865

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Amlwch Port One bright fixed light	53 25. 4 20.	On North pier; shown only when the harbour is practicable	●	26	9	1817
LYNUS or ELIAN POINT One intermitting light	53 25. 4 17.3	A white building, 36 ft. high. Light visible 8 secs.; eclipsed 2 secs. Masked to mark Mid- dle Mouse and Dulas Rocks	●	128	16	1835
Beaumaris	.....	Bright light on pier .....	..	..	..	1865
Menai, Trwyn-Du Point One red fixed light	53 18.8 4 2.4	Circular building, 96 ft. Large Fog Bell thrice every 15 secs.	1a	61	10	1837
GREAT ORMES HEAD One fixed light	53 20.5 3 52.	Light bright from N.W. by W. $\frac{1}{2}$ W. to E., red from E. to E. $\frac{1}{2}$ S.	1a	313	24	1862
Llandudno	.....	Green light on pier-head. Lower red lt. when it is dangerous to come alongside.....	..	..	..	....
Rhyl	.....	Bright light on pier-head.....	..	..	..	....
AIR POINT One br. or red fixed lt.	53 21.4 3 19.2	On old lighthouse, with red and white bands. It is red only within Hoyle Sand, from N.W. to E. by S. $\frac{1}{2}$ S.; fog-bell.....	●	42	9	1844
LIVERPOOL BAY.						
N.W. LIGHTSHIP One br. rev. lt. $\frac{1}{2}$ min.	53 30.3 3 31.3	In 13 fathoms N.W. $\frac{1}{2}$ W. $8\frac{1}{2}$ miles from Horse Channel Fairway Buoy; a blue lt. every 2 hours; a black ball. In fog, a bell.....	●	36	10	1814 1873
BAR LIGHTVESSEL One fixed bright lt.	53 32.2 3 17.2	North $9\frac{1}{2}$ miles from Upper Hoylake lt.-ho., & N.W. by W. $\frac{1}{2}$ W. $8\frac{1}{2}$ miles from Crosby lt.- ho. Fog-horn 3 times a minute or Bell.....	..	..	..	1873
Hoylake Two br. fixed lights	53 23.7 3 10.7	White towers, 55 and 31 ft. In one, S.W. $\frac{1}{2}$ S., 1,200 ft. apart, near the church	4a ..	55 31	13 11	1763
Leasowe One bright fixed lt.	53 24.8 3 7.5	On the shore, between the Mersey and Dee ...	●	94	15	1763
BIDSTON One bright fixed lt.	53 24. 3 4.4	A stone tower, 68 ft. high, on the hill; masked to N. by E. $\frac{1}{4}$ E.	●	228	23	1771
ROCK One rev. br. lt. $\frac{1}{2}$ min.	53 26.6 3 2.4	A white tower, 94 ft. high. Also a fixed lt., while 11 ft. down Rock Channel; and another up the Mersey, from same tower. Fog-bell	●	77	14	1830
North Docks Wall One fix. red & br. lt.	.....	Bright betw. S. by W. & N. by W. $\frac{1}{2}$ W., red over Formby Bank E. of N. by W. $\frac{1}{2}$ W. In line with Rock lt., bearing E. $\frac{1}{4}$ S., indicates turning point betw. Horse & Rock Channels	..	70	9	1877
Birkenhead New Pier	.....	One bright fixed light	6a	..	..	....
Formby Lightvessel One revolving red lt.	53 31.7 3 10.8	At the elbow of Crosby and Queen's Channels, in 50 ft. Hull black. Fog-bell.....	●	30	8	1834 1863
Crosby Lightvessel Three bright fix. lts.	53 30.7 3 6.9	In 48 ft., off the N.E. elbow of the Burbo Bank; a red ball. Fog-horn 3 times a min., or Bell	● ..	29 9	8 ..	1840 1869
Crosby Lighthouse One bright fixed lt.	53 32.3 3 3.9	Square tower, 74 ft., near the point.....	●	95	12	1856
Ribble River One intermittent light One bright Tide Light	53 44.6 3 1.3	S.E. of Stanner Point; visible $3\frac{1}{2}$ min.; dark $\frac{1}{2}$ min. Tide lt. on new pier, from 2h. before to 1h. after high water	4b ..	81 ..	12 ..	1848 1865
Lytham Harbour	53 44.3 2 58.5	One fixed light, while the approach is prac- ticable.....	●	..	..	....
Blackpool Pier	.....	Green light seaward; bright to land .....	..	..	..	....
Fleetwood Two bright fixed lights	53 55.6 3 0.4	North and South, 850 ft. apart; shown while 9 ft. Fog Bell, 3 strokes every minute	● ..	90 30	13 9	1841
Wyre River One bright fixed light	53 57.2 3 1.8	Pile lt.-ho. on N.E. end of North Wharf bank. Fog Bell .....	..	30	10	1840

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Lune River	53 59- 2 53	On Cockerham Point and Plover Scar Rock, while 8 ft. water.....	●	54	9	1847
Two bright fixed lights	2 53		●	20	..	....
Clark Wharf Spit Lt.-Ves.	54 1.3 3 0.	Also shows a bright light, while 8 ft. Fog Bell every 20 secs.	●	30	5	1854
One fixed red light	3 0.					
Morecambe Harbour	.....	1. At extremity of W. or stone pier..... 2. At pier heads, green to westward, red to northward 3. One 130 yds. from end of stone pier, in line with another 1 cable from end of wooden jetty, lead over ba. 4. Fr m end of promenade pier, blue seaward, red to harbour.....	..	..	..	....
1. One fixed bright lt.						
2. Red and green lights						
3. Two red lights						
4. One blue and red lt.						
Morecambe Bay Lt.-Ves.	53 54- 3 31.	In 12 fms.; flash ev. $\frac{1}{2}$ min. Fog-trumpet, 1 blast every 2 minutes. Warning-gun.....	●	31	10	1863
One red revolving light	3 31.					
WALNEY ISLAND	54 2.9 3 10.6	On the S. point. In one, N.W. by W. $\frac{1}{2}$ W., 440 yds. apart. A red light also on Railway Viaduct; and a bright light on Piel Pier ...	●	70	13	1790
One br. rev. lt., 1 min.	3 10.6					
One red fixed light						
Piel Harbour	.....	1. On Michel Sear 2. Bright to S.S.E. and N.W. in direction of channel .....	..	..	..	....
1. One fixed bright lt.						
2. One red and br. lt.						
Barrow	.....	1. On E. side of channel to Barrow, 1 mile N.W. of Piel pier light..... 2. At dock entrance, 2 hours before to 2 hours after high water..... 3. From chimney of Hindpool Ironworks, N. of Barrow.....	..	..	..	....
1. One fixed light						
2. One red light						
3. One flashing lt.						
ST. BEES HEAD	54 30.8 3 38.	A white tower, 55 ft. high	1a	336	25	1821 1866
One bright fixed light	3 38.					
Whitehaven	54 33.2 3 35.8	1. A white tower, 37 ft. high, on W. pier-head. 2. Blue lt. on N. pier; red lt. on Old Quay, while 9 ft., in entrance; red flag by day.....	..	52	11	1823.
1. One rev. lt. 2 min.	3 35.8					
2. Two fixed lights						
Harrington Tide Light	54 37. 3 34.	On the pier-head, while 8 ft. water. Red drum while 8 feet	●	44	11	1848
One fixed light	3 34.					
Workington Tide Lights	54 39. 3 35.	1. On the ends of St. John's & Wooden piers, E. and W., while 8 ft. water 2. Two green lts. in one E.S.E. lead in .....	..	53	11	1825 1866
1. Two bright fix. lts.	3 35.					
2. Two green lights						
Maryport	54 43- 3 30.7	Fixed light on outer pier-head. Tide light, while 8 ft., on inner pier. Red light on star- board side, and green light on North Tongue	4a	51	12	1796 1856
One br., one tide light	3 30.7		..	..	10	
One green, one red light						
Solway Lightvessel	54 48. 3 32.	In 44 fathoms in Robin Rigg Channel. Black ball; a bell in fogs	●	25	6	1841
One red fixed light	3 32.					
Lee Sear	54 51.8 3 24.7	On piles on the rocks. A bell in fogs .....	..	25	6	1841
One bright fixed light	3 24.7					
Skinburness	54 52.5 3 23.	A white building, 32 ft. high, on Cott or Sil- loth Point .....	..	40	9	1841
One red fixed light	3 23.					
Carlisle Port Tide Light	.....	A lamp on the pier-head .....	..	..	..	1841

ISLE OF MAN.

POINT OF AYRE	54 24.9 4 22.	A stone tower, 80 ft. high, $\frac{1}{2}$ mile S.W. of the point; flash every minute	●	103	15	1818
A rev. lt., br. and red, alternately	4 22.					
Peel Harbour	54 13. 4 42.0	Red light on East side of entrance. Bright lt. on end of breakwater.....	●	21	8	1811 1865
One fixed red light	4 42.0		●	32	6	
One fixed light						
Port Erin	.....	On end of new breakwater .....	..	25	3	1869
One green fixed light						
CHICKEN ROCK	54 2. 4 50.7	Granite tower 143 ft. high, $\frac{3}{4}$ mile W. from S. extremity of Calf of Man. Fog-bell every $\frac{1}{2}$ minute	1b	122	16	1874
Revolving br. lt. $\frac{1}{2}$ min.	4 50.7					

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
St. Mary Port	.....	One bright light on pier-head.....	●	25	3	1812
Castletown Harbour	.....	One red lt. on new pier-head. Visible seaward between the entrance points of the bay	--	32	8	1849
Langness Point	.....	Light proposed .....	..	..	..	....
Derby Haven	54 5.	On Fort Island (Aug. 23 to Oct. 10); and S.W.	..	50	6	1850
Two bright fixed lights	4 36.	end of breakwater .....	..	14	2	....
DOUGLAS	54 9.	A brown stone tower, 65 ft., on Douglas Head;	..	104	15	1832
One bright fixed light	4 28.	not visible from Lang Ness				
Douglas Harbour	.....	One fixed light on the North pier-head .....	..	34	6	1796
Douglas Bay	.....	A blue light on end of Promenade pier; red light on S. pier-head; green light on new landing pier .....	..	20	2	1869
Ramsey Harbour	.....	One fixed red light on S. pier-head. One fixed bright light on N. pier-head.....	●	28	4	1845
			..	34	9	1868
BAHAMA BANK LT.-V.	54 20.	In 11 fms., on S.W. part of bank. Powerful	●	23	10	1846
Two bright fixed lights	4 12.	Fog-trumpet; Warning Gun. To be altered in May, 1879, to revolving br. lt., showing 2 flashes once in every 4 minute .....	..	20	..	

Name and Character of Light.	Lat. N. Long. E. o ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
HARWICH Two fixed lts. at Dover- court	51° 55.5 1 17.	624 ft. apart. In one, bearing N.W. by W. $\frac{1}{4}$ W., lead betw. the Inner Ridge & Andrews buoys. High lt. shows from S. $\frac{1}{4}$ E. to E. by N.; low lt. only shows betw. S.E. $\frac{1}{4}$ E. and E.S.E. ....	..	45 27	12 8	1863
North and West Jetties	.....	Red lt. on North jetty, shows from W. $\frac{1}{4}$ N. to W.S.W. Green lt. on West jetty.....	..	..	..	....
Landguard Point One fix. red or br. lt.	.....	A red light outside, from Beach End buoy to S. by E. $\frac{1}{4}$ E.; white to W. A strip of red lt. strikes the N. Shelf buoy to N. by W. ...	6a	33	5	1848 1868
Cork Lightvessel One br. rev. lt. $\frac{1}{4}$ min.	51° 56. 1 23.	In 4 fathoms, near the Cork Ledge. Gong; warning gun.....	●	38	10	1840
SHIPWASH LT.-VES. One bright fixed light	52° 1.5 1 38.	In 9½ fms., off N.E. end of Sand. Fog horn 5 secs. every 2 min.; warning gun.....	●	38	10	1837
ORFORDNESS Two br. or red fix. lts. (High light to South)	52° 5.6 1 35.2	Towers, 90 & 72 ft., with red and white tanks, S.W. by W. and N.E. by E., 1,430 yds. apart. In one, from S., lead through Holliesley Bay, but very close to the N.W. edge of the Whiting Sand; from N., between Sizewell Bank and Aldbro' Napes, &c. High lt. is red from W. $\frac{1}{4}$ S. to W. by S. $\frac{3}{4}$ S. over shoals in Holliesley Bay; the rest bright. Low lt. is red over Sizewell Bank, from N.E. $\frac{1}{4}$ N. and N.E. $\frac{1}{4}$ E. Then masked in-shore. The rest bright	1a ..	91 60	17 14	1793
Kessingland or Pakefield	.....	Red lt. only shows to S.E. through the Gat... |	●	68	9	1832
LOWESTOFT Upper br. rev. lt. $\frac{1}{4}$ min. Lower red or bright lt. (High light to North) Two red harbour lights	52° 29.2 1 45.5	In one N.N.W. $\frac{1}{4}$ W. 900 yds. apart. Low lt. is red over line of sands from N.N.E. seaward to S.W. by S., & br. over in-shore channels. Bell in fog. High lt. br. with lower red lt., betw. N.E. & N.E. by N., as a guide to round the Ness. The red lt. on N. pier is masked in-shore of N.E. by E. $\frac{1}{4}$ E. for same purpose. When red lt. from high tower opens from the northward, haul into red lt. from low lightho. until N. pier red lt. opens, when run for it until low red lt. changes to white. Fog Bell 3str. ev. $\frac{1}{4}$ min.	.. 1a	123 40	18 11	1609 1867 1873
Corton Lightvessel One red rev. lt. 20 secs.	52° 31.5 1 49.5	Fairway lt. in 12½ fms., outside Corton Patch. Half ball below usual ball. Gong; warning gun.....	●	38	9	1862
St. Nicholas Gat Lt.-Ves. One bright fixed light One red flash. lt. 10 secs.	52° 34.3 1 47.	In 10 fathoms, at inner end of channel; one red ball; lights at unequal heights. Gong; warning gun	a ●	40 12	10 4	1827 1872
Yarmouth, or Gorleston 1. One fixed tide light 2. Two red fixed lights	52° 34.4 1 44.3	1. On South pier; red flag by day; lt. is red with flood tide, but green with ebb..... 2. Leading lts. to clear Caistor Shoal, one on Sailor's Home, one on Britannia Pier.....	● ● ●	.. 60 20	2 6 4	1852 1873
Cockle Lightvessel One br. rev. lt. 1 min.	52° 41.5 1 47.	In 6½ fathoms, at East side of North entrance of Cockle Gat. Gong. Warning-gun	●	36	10	1844
WINTERTON NESS One bright fixed light	52° 43. 1 41.5	A circular red tower. 69 ft. high; lt. masked to S. $\frac{1}{4}$ E. to Scroby Elbow	●	52	14	1790 1870
Newarp Lightvessel One rev. bright light	52° 45. 1 53.	In 17 fms. at N. end of Sand, with 3 masts and balls. Lt. gives 3 flashes in quick succession once in every minute, and interval of 36 secs. Gong or Fog-trumpet, 3 blasts once in 2 minutes. Warning-gun	●	34	10	1791 1877
HASBOROUGH Two bright fixed lights	52° 49. 1 32.	In one N.W. $\frac{1}{4}$ W. ($\frac{1}{2}$ mile apart) leading lts. for Hasborough Gat	1a 1a	140 94	17 15	1791 1869
Hasborough Lightvessel Two bright fixed lights	52° 58. 1 36.	In 15 fms. near N. end of Sand; lts. horizontal; two red balls. Gong; warning gun	● ..	38 38	10 ..	1832

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LEMAN & OWER LT.-V. Upper rev. lt. 1 min., lower fixed light	53 8.6 2 1.	In 16 fathoms between the Sands; lts. at unequal heights; two red balls. Gong; warning gun	●	38 27	10 ..	1840
CROMER One br. rev. lt. 1 min.	52 55.4 1 19.1	Near the cliff; a white tower, 59 ft. high	●	274	23	1719 1833
Hunstanton One bright fixed light	52 56.9 0 29.8	The light is red, over the Roaring Middle Sand, from W.N.W. to N.W. by W.....	2a	109	16	1665
Lynn Well Lightvessel One br. rev. lt. 20 secs.	53 1.4 0 25.2	In 17½ fathoms, off the hook of the Long Sand. Gong; warning gun	●	34	10	1828
Lynn Channel Lt.-Vessel One fixed bright light	.....	Moored in 3½ fms., at N.E. end of Wisbeach Bar Flat, 8½ miles above Lynn Well lt.-ves. Gong. Warning Gun .....	..	38	..	1878
Lynn Two bright fixed lights	.....	Leading lights; in one, S. ½ E., 555 ft. apart... ..	..	..	..	1868
Boston	.....	Two bright fixed leading lights at Hob Hole... ..	..	..	..	1868
Inner Dowsing Lt.-ves. One green rev. lt. 20 s.	53 19.3 0 34.3	In 10 fathoms, near N.E. end of shoal. Two globes vertically. Gong. Warning-gun ...	●	38	6	1873
DUDGEON LIGHT-VES. One bright fixed light	53 15. 0 56.	In 9 fathoms, near South side of shoal. Gong. Warning-gun	●	38	10	1736
OUTER DOWSING LT.-V. One red rev. lt. 20 secs.	53 28.2 1 2.6	In 9 fms., on W. side of shoal. Half ball over other ball. Fog-horn, 5 secs. every 2 min. Warning-gun	●	38	9	1861
RIVER HUMBER Spurn Lightvessel One br. rev. lt. 1 min.	53 34. 0 13.	In 9½ fms., off the point. Warning-gun. Fog-horn, 2 blasts every 2 min. Warning-gun... ..	●	38	10	1820
SPURN POINT Two bright fixed lts.	53 34.7 0 7.2	High lt.-ho. red; low lt.-ho. white. In one, N.W. ½ N., 464 ft. apart. High lt. red betw., Sandhalls and Grimsby Pier, or from S.E. by S. to N.W. by W. ½ W.	1a 4a	93 54	15 12	1776 1861
Bull Sand Lightvessel	.....	One bright fixed light off Spurn Pt. Fog-bell	●	21	8	1832
Grimsby Three fixed red lts. Two green lights	.....	Red lt. on each pier-head of outer basin, and red lt. on outer pier, E. side of entr. to Fish Dock; green lt shown at E. or W. entr. to Fish Dock when gate is open .....	..	..	..	....
Middle Sand Light-ves.	.....	Red light near a wreck .....	..	..	..	1868
Stallingborough Ferry	..... Long. W.	One bright fixed light to E.N.E. ....	●	..	..	1849
Killingholme Three bright fix. lts.	53 39. 0 12.	Lights in one, N.W., lead up the river; and when S. by W. lead down	●	68 36	11 ..	1836 1862
Thorngumbald Clough	.....	Two fixed leading lights .....	..	..	..	1870
Salt End	.....	Two fixed leading lights .....	..	..	..	1870
Withernsea	.....	Red light at end of pier .....	..	..	..	....
Bridlington One red fixed light	54 5.2 0 11.7	On the North pier-head while 9 ft. water .....	..	24	8	1862
FLAMBORO' HEAD One revolv. lt. ¼ min., br. br. and red alternately	54 6.9 0 4.8	A white tower, 87 ft. high; bearing N.N.E., clears N. end of Smithic. A new lens apparatus, established June 22, 1872, showing br. br. & red flashes, of equal intensity, every ½ minute. In fogs, rockets fired ev. 10 min., to explode at an elevation of 600 or 700 ft....	1b	214	21	1806
Scarborough Tide Light One red fixed light	54 17. 0 23.	While 10 ft. water; on Vincent Pier; bright toward harbour. A ball by day .....	..	58	13	1806
HIGH WHITEBY Two bright fixed lights	54 28.7 0 34.2	In one, S. by E. ½ E. (258 yards apart). A red lt. from N. tower over the Scar Rock	1a	240 240	23 ..	1858

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Whitby Harbour One <i>green tide light</i> One <i>red or green light</i>	54 30. 0 37.	Green tide light on W. pier, from 2 hours' flood to 2 hours' ebb. E. Pier lt. red to S., but green to N. of Rock buoy.....	● ●	83 54	5 8	1831 1855
TEES BAY						
Coatham	.....	Red light on outer end of pier	6a	30	6	1876
Bran Sand	54 38. 1 13.	Wooden towers. (Not used) .....	..	53 38	..	1839
1. Fifth buoy, br. fix. lt. 2. Seal Sand, <i>red fix. lt.</i>	.....	1. and 2. 1,200 yds. apart; in one, S.W. $\frac{1}{2}$ W., mark for Fairway buoy, and lead in. There are six small lts. up the Tees ..	5a ..	27 42	7 7	1866
Seaton High br., low <i>red lt.</i>	54 40. 1 12.	In one, N.W. by W. (118 yards apart).....	● ..	89 34	13 ..	1839
HARTLEPOOL High bright, low <i>red tide light</i>	54 41.8 1 10.3	On the Heugh. The red tide lt., or red ball, from half flood to half ebb	1a 4a	84 62	15 4	1847
Hartlepool Old Harbour	.....	Red lt. on pier; two red lts. on quay .....	..	..	..	1836
„ West Harbour	.....	Green lt. on N. Pier; two red lts. in one lead in while 10 ft. water .....	..	..	..	1855
Seaham Upper bright fixed lt., low <i>red rev. lt. $\frac{1}{2}$ min.</i>	54 50. 1 19.	In one stone tower, 58 ft. high, on Red Acre Point	5a 6b	94 49	14 11	1843 1857
Seaham Harbour		Red tide light, when practicable	5a	..	4	1846
Sunderland Upper bright, lower <i>red lt. on N. pier, one br. tide light on S. pier</i>	54 55.1 1 21.6	N. pier lts. all night. Tide lt. on S. pier, from $\frac{1}{2}$ flood to $\frac{1}{2}$ ebb; a green lt. below it shows danger	3a 5a	73 68	14 11	1802 1857
SOUTER POINT One <i>brilliant rev. lt. $\frac{1}{2}$ min.</i> ; lower bright or <i>red light</i>	54 58.2 1 21.5	Tower, 76 ft. "Magneto-Electric" lts. Lower br. lt. from S. by E. to S. $\frac{1}{2}$ W.; thence red to S. by W. $\frac{1}{2}$ W over Whitburn Stile, Hendon Rocks, &c. Powerful fog-horn ev. $\frac{1}{2}$ min.	1b ..	150 129	20 ..	1871
TYNEMOUTH One <i>red rev. lt. 1 min.</i>	55 1.1 1 24.	White tower, 79 ft. high. Near Priory ruins, in the castle	●	154	..	1802 1871
Tyne North Pier Green, white, & red lts.	.....	Vertical, on North Pier Works. A red lt. at middle of North pier.....	..	..	..	....
Tyne River Two bright fixed lights	55 0.5 1 26.0	At North Shields; in one, W. by N., 240 yards apart; shown all night.....	● ..	123 77	16 13	1808
Blyth Two bright Tide Lights	55 7. 1 30.	While 8 ft. water; in one, N. by W. $\frac{1}{2}$ W.	● ..	48 26	11 7	1783
COQUET ISLAND Two fixed lights in one tower	55 20.1 1 32.	Upper lt. br. seaward, but red W. of N. by E. $\frac{1}{2}$ E. over Bulmer Bush Rocks, &c. Lower lt. br. from S.S.E. to S. $\frac{1}{2}$ E.; thence westward is red over Bondicar Bush, to S. by W. $\frac{1}{2}$ W.	1a ..	83 55	14 12	1841 1871
Warkworth, red Tide Light	.....	While 10 ft. water. On South pier .....	..	..	1	1848
FARN ISLAND Upper light <i>rev. $\frac{1}{2}$ min.</i> , lower fixed light	55 36.9 1 38.9	Two white towers, 43 and 27 ft.; in one, N. by W. $\frac{1}{2}$ W., 187 yards apart; high light near S.W. point.....	● ..	87 45	16 12	1776
LONGSTONE One br. <i>rev. lt. $\frac{1}{2}$ min.</i>	55 39. 1 37.	Red tower on W. side of rock. Dangers extend $\frac{1}{2}$ mile to N.E. Fog Horn, 2 blasts ev. 2 min.	●	75	14	1826
Berwick-on-Tweed Upper br., lower <i>red lt.</i>	55 45.9 1 58.9	Tower, 44 ft., on the pier-head. Lights not visible W. of Seal Carr Ledges. Low red lt., while 10 ft., on bar	● ..	44 28	11 6	........

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Eyemouth	.....	One red, one bright fixed light .....	..	..	..	1857
ST. ABB'S HEAD One bright flashing lt.	55 55. 2 8.	White tower, 29 ft. high; flash every 10 secs. Fog Horn, 1 blast of 6 secs. every 1½ min.	1d	224	20	1862
Dunbar Old Harbour " Victoria Harbour	56 0. 2 30.7	Old Harbour lt. br. toward entrance, but blue to W., red to E. Bright lt. at Victoria Har- bour. Additional lts. in fishing season .....	..	..	..	1857
North Berwick	.....	Red lt. on North pier, October to April .....	..	..	..	....
Cockenzie FRITH OF FORTH	.....	Green light on East pier-head .....	..	15	8	....
INCHKEITH One br. rev. lt. 1 min.	56 2. 3 8.	A white tower, 45 ft. high, on the summit of the island	2b	220	18	1804
Fisherrow One red fixed light	.....	On the pier-head; all night, except in moon- light	●	20	5	1839
Leith Green lt. on E. pier-head Red light on E. pier White light on W. pier	55 59. 3 10.	A green lt. under the white one, on inner part of W. pier, while 10 ft. in Victoria Dock; the green changed to red when Dock gates are open Gong.....	6a 6a 6a	17 22 28	8 8 10	.... 1768 1829
Newhaven	55 59. 3 11.	One bright lt. on the pier, strengthened in the direction of Herwit Shoal	6a	32	5	....
Granton Three fixed lights	55 59. 3 15.	Red lt. on main pier-head. Fog Bell. Green lt. on E. and red lt. on W. breakwater heads	..	33	6	1845
Grangemouth One fixed red light	.....	At entr. of River Carron. On end of S. em- bankment, reflected or apparent red lt. is also shown on N. side of entrance	●	33	10	1847
Charlestown	.....	One bright light on end of outer pier	6a	..	..	1866
Inverkeithing	.....	Two red lights on West Quay.....	..	..	..	1856
St. David	.....	A bright fixed light .....	..	19	..	1866
Burntisland Red and bright lights	56 4. 3 14.	Red lt. on E. pier-head, and br. lts. on each of the railway piers, a short distance to the eastward, while the ferry is running. On the E. pier-head a green lt. below red lt. indi- cates, Keep in the offing..... A red lt. at Newhalls, & a white lt. at Queens- ferry, for passage boats only .....	.. .. ..	13 28 26	8 .. 8	1845 1853 1860
Pettycur	.....	One bright fixed light on pier .....	..	..	..	1854
Kirkcaldy One fixed light	56 7. 3 9.	On East pier head. Red to seaward; white when harbour is open .....	..	35	8	....
Dysart	.....	Green light .....	..	..	..	....
W. Wemyss	.....	Red tide light .....	..	..	..	....
Buckhaven	.....	A white light on East pier-head.....	a	17	9	1854
St. Monans One red, and one br. lt.	56 12.5 3 46.3	One on pier-head; the other on a house; fish- ing lights .....	..	20	..	1855
Pittenweem Two fixed red lights	56 13. 2 43.5	One on pier-head, and one on a building. In bad weather a bright gas light is shown while 6 feet	6a 6a	25 ..	6 6	1853
Anstruther One fixed bright light	56 13.3 2 41.9	On E. pier-head. Also two bright leading lts. at W. Anstruther .....	..	20	4	1848
Cellardyke	.....	On a house, in W. part of harbour; only while boats are out .....	..	..	..	....
Orail One red, one bright lt.	.....	Upper red, lower br. lt. From old stone beacons on top of cliff. Aug. 1 to April 30. Gas lts.	.. ..	100 80	6..	........

Name and Character of Light.	Lat. N. Long. W. o /	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
ISLE OF MAY Two brilliant fixed lts.	56 11.1 2 33.3	Two stone towers, 78 and 86 ft.; low lt., 750 ft. distant, on N.E. side. In one, S.S.W. $\frac{1}{2}$ W. leads $\frac{1}{2}$ mile E. of North Carr Rock. Low lt. only visible over 15° towards N. Carr Rock	1a ●	240 110	21 15	1816 1844
BELL ROCK One revol. light, bright and red alternately, every minute	56 26.1 2 23.1	A tower, 117 ft. high; on the Bell Rock, at 10 feet below high water. A bell is sounded every half minute in fog.	1a	93	15	1811
St. Andrew's Two fixed lights	56 20. 2 47.	Red lt. on the pier-head, and bright lt. on a turret in cathedral wall	● 5a	30 100	6 5	1825 1849
BUDDONNESS or TAY Two brilliant fixed lts.	56 28.1 2 44.9	Two white towers, 104 and 65 ft., 1,300 ft. apart, on the low Ness. In one, N.N.W. $\frac{1}{2}$ W., lead on to the Abertay Sand. High lt. open N. of low lt., bearing N.W. $\frac{1}{2}$ N., leads up to entrance	3a 3a	103 61	15 12	1820
Tay River Light-ves. <i>Intended</i>	.....	To show a flashing lt. ev. 10 secs. S.E. $\frac{1}{2}$ S. from Buddon Ness high lt.-ho., & N.E. $\frac{1}{2}$ E. $\frac{3}{4}$ cables from black buoy No. 3.	..	..	..	....
Port on Craig Two bright fixed lights	56 27. 2 49.	West, a white tower, 76 ft. East, a pile ltho., 1,700 yds. apart. In one, N.W. by W. $\frac{1}{2}$ W., lead up the Tay. A fog-bell at the pile ltho.	a ●	80 35	12 10	1820 1845
Newport Two bright fixed light	56 26. 2 57.	On the West Ferry pier. In one, N.N.E., 63 yards apart	● ..	10 16	7 8	........
Dundee Harbour 1. Two fixed red lights 2. Red and bright lts. 3. Two fixed red lights	.....	1. On middle and E. pier. In one, N.W. $\frac{1}{2}$ W., lead S.W. of Beacon Rock. In one, N.N.W. $\frac{1}{2}$ W., lead on to the Abertay Sand. High lt. open N. of low lt., bearing N.W. $\frac{1}{2}$ N., leads up to entrance 2. On Ferry pier at Dundee, to lead East of Middle Bank. 3. Tide lts. at entrance of Camperdown dock	●	11 .. 19	7 .. 3	1827 1865
Arbroath 1. One red fixed light 2. Two fixed lights	56 33. 2 35.	1. On the North pier, when vessels enter. An occasional bright flash is a warning to keep off 2. Leading lights West of inner harbour.	● ..	24 ..	8 ..	1826
MONTROSE NESS One bright fixed light	56 42. 2 26.	A white brick tower, 127 ft., on South pt. of entrance.	2a	124	17	1870
Montrose Harbour Two fixed red lights	56 42. 2 27.	White towers, on the N. side of entrance, 900 feet apart. In one, N.W. by W. $\frac{1}{2}$ W., lead into the river	● ..	60 35	10 11	1816
Stonehaven One br., one red fixed lt.	56 58. 2 12.	East, or low lt., bright. On inner side of harbour. In one, W. by N. $\frac{1}{2}$ N.	● ..	18 24	6 ..	1839
GIRDLENESS Two bright fixed lights	57 8.2 2 3.	In one tower, 120 ft. high. Fog Whistle for 10 secs. at intervals of 1 minute.	1a ●	185 115	19 16	1833
Aberdeen One bright fixed light Two red (or green) fixed lights Red, white, & green lts.	57 8.5 2 4.1	Tide lt., bright, on N. pier-head, from $\frac{1}{2}$ -flood to high water. When entr. is safe, the two lts. at Torry are red; when ships cannot enter, green. In one, W. by S., they lead in. On pole at head of S. breakwater, 6 ft. apart. Not shown in bad weather, when N. pier lt. is obscured over and 200 yards outside S. break water head	a	40 47 30	8 3 ..	1842
SUCHANNESS One flashing lt., 5 secs.	57 28.2 2 46.1	A stone tower, 15 ft., on the Ness. Shown from N. by E. to S.W. by W., by E. and S.	●	130	16	1827
Boddam 1. Two fixed red lts. 2. Two fixed red lts.	.....	1. About 120 yds. N. of pier of S. harbour. In one lead through E. channel to S. harbour... 2. On wooden bridge and on wooden pier of S. harbour. In one lead through W. channel to S. harbour. Only in fishing season	..	..	..	....
Peterhead Lts. discontinued during alterations, 1878-9	57 30. 2 46.	Br. lt. on elbow of W. pier in S. harbour; shown to S., betw. S. $\frac{1}{2}$ E. and S.W. by W. $\frac{1}{2}$ W.; red lt. on W. pier in N. harbour; shown to E., betw. E. $\frac{1}{2}$ N. and N.E. $\frac{1}{2}$ N.	a a	24 26	10 10	1834 1849
Fraserburgh Two fixed red lights	57 41.5 2 0.	On pier-head and middle pier. In one, S.E. by E., 228 ft. apart; from July to April	..	36	5	1841
KINWAIRD HEAD One br. or red fixed lt.	57 41.9 2 0.1	A stone tower, 76 ft. high. Light red over Rattray Brigs, westward of S.S.E. $\frac{1}{2}$ E.	1a	120	15	1851

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the Light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Gardenstown One fixed light	.....	Shown on E. quay-head, in br. and red sectors	..	..	..	....
Maoduff One br. or red fixed lt.	57 40. 2 30.	On the W. pier-head. Is red when the harbour is open	●	25	6	1829
Banff Two white, one red lt.	57 40. 2 31.	One white light on N. pier-head. One high white lt., with lower red lt., in the upper part of the new harbour; visible when entrance is open. In one, S.E. $\frac{1}{2}$ S., lead in ...	..	28	8	1851
Elgin and Lossiemouth	.....	One green light on South pier-head .....	..	30	..	1866
COVESEA SKERRIES One rev. lt. 1 min.	57 43.2 3 20.3	Stone tower, 118 ft., on Craig Head. It is red to E., in Spey Bay, from S.E. by E. $\frac{1}{2}$ E., to S.E. $\frac{1}{2}$ S. The rest is bright	1b	160	18	1846
Chanonry Point One bright fixed light	57 34.5 4 5.	A stone tower, 42 ft. high, on the point	4a	40	11	1846
Gromarty Point One red fixed light	57 41. 4 2.	A tower, 42 ft. high, on the point	4a	50	9	1846
TARBET NESS One intermittent lt.; br. 2 $\frac{1}{2}$ min., eclipsed $\frac{1}{4}$ m.	57 51.9 3 46.5	Stone tower, 134 ft. high, 430 yards from extreme. Within Moray Frith, from S. $\frac{1}{2}$ W. to S.W. $\frac{1}{2}$ W. light is continuous (fixed)	●	175	18	1830
Little Ferry Two fixed lamp lights	57 56. 4 0.	Occasionally; on N. side, N.W. $\frac{1}{2}$ N., 1,800 ft. apart .....	..	19	4	....
Latheronwheel One fixed white light	58 16.2 3 22.9	Occasionally; on South head, at the end of fishing season .....	..	..	..	1852
Wick or Pulteney Town One red, one br. light	58 26. 3 5.	On the North pier-head; red lt. on new break-water	a	35	8	1851
NOSS HEAD One revolving lt. $\frac{1}{4}$ min.	58 28.6 3 3.1	Bright light seaward; in Sinclair Bay, from N.E. $\frac{1}{2}$ N. to W.N.W., the lt. is red	1b	175	20	1849
PENTLAND SKERRIES Two bright fixed lights	58 41.4 2 55.4	Two stone towers, 118 and 88 ft. high, N.N.E. and S.S.W., 100 ft. apart	1a 1a	170 140	18 16	1794
DUNNET HEAD One bright fixed light	58 40.3 3 22.3	A stone tower, 66 ft. high, on the northernmost point of Scotland	1a	346	23	1831
Little Holburn Head One flashing lt., 10 secs.	58 36.8 3 32.2	Tower, 55 ft. high. Light white toward Pentland Firth; red West of S.S.W., in Scrabster Road	1a	75	13	1862

ORKNEY ISLANDS.

CANTICK One br. rev. lt., 1 min.	58 47.0 3 7.6	A white brick tower, 78 ft. high, on the head, Hoy Island	2b	116	16	1858
Hoy Sound, Gremsa Id. High light, red or white Low light, bright	58 56.1 3 16.5	The bright low light is on the N.W. point, and is visible N. of E. $\frac{1}{2}$ S. and W. $\frac{1}{2}$ N. The high lt., on N.E. point, is red to seaward, but br. from N.N.W. $\frac{1}{2}$ W. to E.N.E. A ray of light is shown toward E. entrance of Hoy Sound, between S.S.E. $\frac{1}{2}$ E. and S. $\frac{1}{2}$ E. In one, S.E. $\frac{1}{2}$ E., they lead in mid-channel from westward. They are 2,237 yds. apart.....	● a	115 55	10 7	1851 1851
Kirkwall One bright fixed light	58 59.2 2 57.5	On the pier-head, from August to April.....	●	20	9	1854
AUSKERRY One bright fixed light	59 2. 2 34.	White brick tower, 112 ft. high, on S. point of island, in Stronza Firth	1a	110	16	1867

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
START POINT One fixed red light	59 16.6 2 22.4	A new stone tower, on East point of Sands Island, Ronaldsha Firth	4a	80	14	1836 1870
NORTH RONALDSHA One br. flash. lt. 10 secs.	59 23.2 2 23.6	A brick tower, 159 ft. high, on N. point of Orkney Islands	a	140	18	1854
SHETLAND ISLANDS.						
SUMBURGH HEAD One bright fixed light	59 51. 1 16.	A stone tower, 55 ft. high, on the S. point of Zetland	●	300	22	1812
BRESSAY One rev. lt., 1 min.; red and white alternately	60 6.2 1 7.5	White tower, 53 ft. high, on E. side of entrance to Lerwick	2b	105	15	1858
WHALSEY SKERRIES One br. rev. lt., 1 min.	60 25.4 0 44.	A white tower, 98 ft. high, on Bound Skerry...	1b	145	18	1854
NORTH UNST One bright or red light	60 51.3 0 53.	A white tower, 64 ft. high, on Muckle Flugga, N. part of island. The lt. is red towards the Skaw of Unst. Red between S.S.E. $\frac{1}{2}$ E., and S.E. by E. $\frac{1}{2}$ E.	1a	235	21	1854
CAPE WRATH One revol. lt., 1 min.	58 37.5 4 59.7	White tower, 65 ft. high. Flashes white and red alternately	●	400	23	1828 1871
BU STOKE One br. intermitting lt.	58 14.2 5 23.	White tower, 47 ft. high, on S. Ear. Visible 1 min. Eclipsed $\frac{1}{2}$ min.	a	195	20	1870
SOUTH RONA One bright flash. lt. 12 s.	57 34.5 5 57.4	White tower, 42 ft. high, on N.E. point of island	2c	222	20	1857
Kyle Akin, LOCH ALSH One br. or red fixed lt.	57 16.6 5 44.5	On S.W. point of Gilleann Island. Lt. bright in fairways of Applecross Sound and Loch Alsh. Red elsewhere	a	53	11	1857
Oronsay Island One br. or red fixed lt.	57 9. 5 47.	White tower, 63 ft. high, on island, N.W. part of Sleat Sound	4a	58	12	1857
HEBRIDES ISLANDS.						
BUTT OF LEWIS One bright fixed light	58 30.7 6 16.	A white tower, 20 ft. high. Visible seaward from S. by E. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S.	1a	170	19	1862
Stornoway 1. One br. rev. lt. $\frac{1}{2}$ min. 2. A reflected light	58 11.5 6 22.2	1. White tower, 45 ft. high, on Arnish Point... 2. A prism on beacon, on S.E. end of reef, re- flects light from a lower window; visible in entering	2b ..	56 27	12 2	1862
East Loch Tarbert	.....	Red light on breakwater .....	..	..	..	1876
MONACH ISLES Upper lt., flashing 10. s. Lower lt., fixed red	57 31.6 7 41.6	In one tower, 133 ft. high, on Shillay Island. Red lt. shown to northward, from N.W. by N. to N.E. by E.	1a 4a	150 62	17 12	1864
GLASS ISLAND One fixed bright light	57 51.4 6 38.5	White tower, 100 ft. high, on E. pt. of Scalpay, Harris Isles	1a	130	17	1789
USHENISH One fixed red light	57 17.9 7 11.5	East side of S. Uist. Shown between N.E. $\frac{1}{2}$ N. and S.S.W.	1a	176	18	1857
BARRA HEAD One intermitting light	56 48. 7 38.	Visible $2\frac{1}{2}$ min., and dark $\frac{1}{2}$ min. On top of Bernera Island	●	680	33	1833
SKERRYVORE One rev. light, 1 min.	56 19.4 7 6.5	Granite tower, 158 ft. high, on the rock	1c	150	18	1844

Lighthouses.

E

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
DURR AETACH ROCKS One fix. bright or red lt.	56 8. 6 38.	Tower, 96 ft. high, on rock off Iona Sound. Light is red towards S. coast of Iona and Torrannan Rocks, or to between E. $\frac{1}{2}$ S. and N. by E. $\frac{1}{2}$ E.; the rest bright all round. Fog-bell 10 secs. in ev. 40 secs.	1a	145	18	1872
ARDNAMURCHAN One fixed bright light	56 43.6 6 13.5	Stone tower, 118 ft. high, on the point. Shown between N.E. by E. $\frac{1}{2}$ E., and S.S.W. $\frac{1}{2}$ W.	1a	180	18	1849
Sound of Mull One fixed light	56 38. 6 4.	On Runa Gal Rock. Red lt. N. to seaward; green towards rocks; white towards Mull Sound.	4a	55	12	1857
LISMORE One fixed bright light	56 27.3 5 36.3	White tower, 86 ft. high, on Muddie Island ...	●	103	15	1833
Loch Eil One fix. br. or red lt.	56 43.3 5 14.5	On Corran Point. Light is red to E., between S.W. by W., and N.E. by E. $\frac{1}{2}$ E., and is br. to westward.	..	36	10	1860
Oban Phladda Island One fix. br. or red lt.	..... 56 19. 5 39.5	A lantern on the pier for steamers North end of Scarbe Sound. The lt. is red northward, over Bogha Nuadh Rock, betw. N. by E. $\frac{1}{2}$ E. & N.N.E. $\frac{1}{2}$ E.; thence bright landward to S.S.W. $\frac{1}{2}$ W.	.. 4a	.. 42	.. 11	1858 1860
Crinan Canal	.....	One red light on East side .....	..	25	4	1851
Sgeir Macle or Iron Rock One br. rev. lt. $\frac{1}{2}$ min.	55 52.5 5 49.5	Tower, 83 ft. high, on Sgeir Macle or Skervuile, at S. entrance to Sound of Jura.....	2b	73	14	1865 1871
Rudha Mhail One fixed br. or red lt.	55 56.1 6 7.5	White tower, 113 ft. high, on N. pt. of Islay Island. Light is red to westward between N.N.E. $\frac{1}{2}$ E. and W. by N. Bright in all other directions .....	..	..	..	....
M'Arthur's Head One fixed br. or red lt.	55 45.8 6 2.8	White tower, 42 ft. high, on S. end of Islay Island. Light bright up Sound to N. $\frac{1}{2}$ E.; thence red towards Jura to East. The rest bright.....	1a	128	17	1861
RHYNNIS OF ISLAY One flashing lt., 5 secs.	55 40.3 6 30.8	White tower, 96 ft. high, on Oversey Island, off S.W. point of Islay.....	●	150	17	1825
Lochandall One bright, or red fix. lt.	55 44.7 6 22.2	On Dun Point, N. of Port Charlotte. Light is bright to S., from S.W. by W. to S. by W.; thence red to E. $\frac{1}{2}$ S.; then br. to N.E. by E. $\frac{1}{2}$ E.	4a	50	12	1869
Port Ellen One fixed red light	55 36. 6 12.	Square tower, 60 ft. high, on Carriga Fadda Point, West entrance.....	..	45	11	1853
MULL OF CANTYRE One fixed bright light	55 18.6 5 48.	S.W. headland of Cantyre	●	297	22	1787
SANDA ISLAND One fixed red light	55 16.5 5 34.9	On the Ship Rock. Not seen to N. of S.E. by E. $\frac{1}{2}$ E.; kept in sight, clears Patterson Rk. Fog Horn, blast of 7 secs. every min.; best heard when southward of it. Elevated 150 ft.	1a	165	15	1850
DAVAR ISLAND One br. rev. lt., $\frac{1}{2}$ min.	55 25.7 5 32.2	Stone tower, 65 ft. high, on East part.....	2b	120	17	1854
Campbellton	.....	Red lt. on old pier-head, shows from S.S.E. to E.N.E.; green lt. on new pier-head, shows from S.S.E. to N.E. by E. $\frac{1}{2}$ E. ....	..	18	2	....
Ardriashaig	.....	A fixed white light on pier-head .....	..	25	4	1850
FLADDA ISLAND Two fixed bright lights	55 26. 5 7.1	One 52 ft. above the other. On island, off S.E. pt. of Arran Island. Shown seaward, from N.W. by W. to N.E. by E. Fog-trumpet, 5 secs. in every $\frac{1}{2}$ minute	● ●	180 77	17 14	1790

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
FIRTH OF CLYDE.						
Lamlash Harbour	55 33.3	Lt.-ho. on S.W. end of Holy Id., E. side of S. entr. to harbour. Vis. seaward from S.E. $\frac{1}{2}$ E. to S.W. by S., and in harbour. Fullerton Rock W. $\frac{1}{2}$ S. 530 yards from lighthouse.....	4a	46	12	1877
One fixed green light	5 4.0					
CUMBRÆE	55 43.3	White tower, 36 ft. high, W. side of Little Cumbræe Id. Fog-trumpet, 5 secs. in ev. 25 secs.	2a	115	15	1793
One fixed bright lt.	4 58.					
Toward	55 51.3	White tower, 63 ft. high, on the point	●	55	11	1812
One br. rev. lt. 1 m.	4 59.7					
Cloch	55 56.6	White tower, 76 ft. high, on pt. Fog-whistle of 3 notes sounded 8 secs. 4 times a minute At Kempeck Pt. a Fog-bell is struck ev. 6 secs., and at Fort Matilda 3 Fog-bells, of different tones, are struck once every 8 secs.	●	76	..	1707
One fixed bright lt.	4 52.6					
Greenock, Garvel Point	55 57.	South edge of channel, 280 yds. S.E. by E. $\frac{1}{2}$ E. from custom-house light	4a	25	7	1868
One red fixed light	4 45.	The red lts., 1 mile N.N. W. of custom-ho., 140 yds. apart. In one, W. by S. $\frac{1}{4}$ S., lead to anchorage. The white lt. in front of custom-ho. ....	..	40	..	1834
Two red, and 1 white light			..	26	4	1829
Helenborough	.....	Red lt. on pier-head, green lt. on inner end of pier, between are two bright lights .....	..	..	..	....
Port Glasgow	.....	One fixed bright lt. off entrance, and another on steam-boat quay	4a	18	3	1861
CARDROSS	.....	Red light on the Pillar Bank	5a	22	4	1849
Auchenlech	.....	Bright light $\frac{1}{2}$ mile above Port Glasgow .....	..	..	..	....
Bowling Bay	.....	Small light in Forth and Clyde Canal .....	..	12	2	1849
Garmoyle Lightvessel	.....	Bright light 3 miles above Port Glasgow .....	..	24	..	1868
Dumbuck	.....	South side of channel .....	..	..	..	1868
Dickie's Light	.....	Bright light 1 mile above Dumbarton .....	..	..	..	....
Donald's Quay	.....	Red and bright light .....	..	26	..	1849
Park Quay	.....	At bend of channel .....	..	24	..	1869
Near Newshot Island	.....	Red light on North bank .....	..	24	..	1869
Glasgow, Broomielaw	.....	Gas light .....	..	22	4	1844
Ardsrossan	55 38.4	On breakwater; bright 4 secs.; eclipsed 1 sec. Shown betw. W. and W.S.W. Fog-trumpet	a	25	5	1840
One bright flashing lt.	4 49.5					1870
Saltcoats	55 37.9	Bright bull's-eye in red glass plate, on pier ...	..	26	6	1840
Troon Harbour	55 33.	Revolves, 40 secs. bright, 20 secs. hidden. In one, S.W. $\frac{1}{2}$ S., 330 yards apart .....	..	35	9	1827
Rev. br. lt. & fix. red lt.	4 41.		..	35	6	1848
Ayr Harbour	55 28.2	At N. side of harbour. Red tide light N.W. by W. $\frac{1}{2}$ W., 285 yds. distant; while 8 ft. on bar	6a	56	10	1790
Upper br., lower red lt.	4 38.2		..	19	7	1826
Red Tide Light			..	14	6	....
Turnberry Point	55 19.5	White brick tower, 64 feet high, at ruined castle	b	96	15	1873
One br. flash. lt. 12 secs.	4 50.3					
Loch Ryan	54 57.7	White tower, 56 ft. high, on Cairn Ryan Point	4a	46	10	1847
One fixed bright light	5 2.					
Stranraer	54 54.7	On East pier; West pier, and inner end .....	..	9	..	....
White, red & green lts.	5 1.7					
CORSEWALL	55 0.5	A white tower, 110 ft. high, on West side of entrance to Loch Ryan	●	112	15	1817
One red and white rev. light, 1 min.	5 9.5					
Port Patrick	54 50.3	White stone tower, 30 feet high, at S.E. angle of harbour	6a	37	10	1856
One fixed bright light	5 7.0					1870
MULL OF GALLOWAY	54 38.1	On S.E. point. Visible $\frac{1}{4}$ min.; invisible $\frac{1}{4}$ min.	●	325	23	1830
One intermitting br. lt.	4 51.3					
LITTLE BOSS	54 46.	White tower, 65 ft. high, on the island	1c	175	18	1846
One flash. light, 5 secs.	4 5.					
Annan River	54 57.7	On Barnkirk or Annan Foot, from half flood to half ebb Fog Bell .....	..	..	..	1841
One fixed white light	3 16.					

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
FASTNET One rev. light, 1 min.	51 23.3 9 36.4	Circular white tower, 92 ft. high, with red belt, on the summit of the rock	1b	148	18	1864
GALLEY HEAD One revol. lt. ev. min.	51 31.8 8 57.2	White lt.-hc. on extr. of head. Lt. shows 6 or 7 flashes during 16 secs., and is obscured 44 secs. Visible between W. and E. by S.	o	174	19	1877
KINSALE OLD HEAD One bright or red light	51 36.2 8 31.9	A white tower, 100 ft. high, with two red belts. A red ray is sent over the outer part of Courtmacsherry Bay, between N.W. by W. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ N., or from the Seven Heads to the Horse Rocks.....	1a	236	21	1853
Kinsale Harbour One bright fixed light	.....	From window on Fort Charles, on East side. From S.S.W. $\frac{1}{2}$ W. to S.W. $\frac{1}{2}$ S.	●	38	10	1804
Daunt's Rock Lt.-Ves. One red fixed light	54 43. 8 17.	Vessel black, in 14 fms., at $\frac{1}{2}$ mile S. by E. from Daunt's Rock, and $\frac{1}{2}$ miles S.W. from entrance to Cork Harbour. A fog-gun twice every $\frac{1}{2}$ hour	●	39	8	1874
CORK HARBOUR Poor Head	.....	At 3 miles S.E. of entrance to Cork, a fog-trumpet gives blast of 5 secs. every 2 min....	..	..	..	....
Roche Point Upper lt. intermit. br. Lower light, fix. br.	51 47.5 8 15.2	White tower, 49 ft. high. Upper lt. shows br. for 15 secs., and is eclipsed 5 secs. Lower br. lt. shows only from S.W. by W. to S.W. $\frac{1}{2}$ S., over Daunt's Rk. Fog-bell twice in ev. min.	● 2a	98 60	10 8	1817 1864
Queenstown SPIT BANK One fixed red light	51 50.7 8 16.4	On piles, in 9 ft. water, on E. elbow of bank. Lt. red, with a sector of br. lt. over Bar Rock, between N.E. by E. $\frac{1}{2}$ E. and N.E. $\frac{1}{2}$ N.	4a	32	8	1848 1853
MELROUSE SPRT One fixed red light	.....	On piles, 100 ft. from the channel. Fog-bell....	4a	25	3	1859
Bright, red, & green lts.	.....	A green lt. is shown on the N. side of the channel at Donkettle; a bright lt. at Black Rock Castle; and a red lt. at Dundain, and also at Tivoli .....	..	..	..	....
BALLYCOTTIN Flashing light, 10 secs.	51 49.5 7 59.	Circular stone tower, 50 ft. high, on the outer island; shown from E. $\frac{1}{2}$ N. to W. $\frac{1}{2}$ N. Fog-bell	1c	195	18	1850
Youghal 1. One bright fixed lt. 2. Lower red tide light 3. Additional red tide lt.	51 56.5 7 50.5	1. & 2. In one tower, on W. side of entrance 2. Shown from S.W. by S. to S. by W. $\frac{1}{2}$ W. From 2h. before to 2h. after high water. A tide-ball by day 3. Shown from small building E. of lightho., betw. S.S.E. $\frac{1}{2}$ E. & S.E., from 2h. before to 1 $\frac{1}{2}$ h. after high water	3a	78	6	1852 1870
MINEHEAD Interm. light, 1 min.	51 59.5 7 35.1	On S. side of head. Bright, 50 secs.; suddenly dark, 10 secs. Shown from W. by S. $\frac{1}{2}$ S. to E. $\frac{1}{2}$ N.	1a	285	21	1850
Dungarvan Red, green, and br. lt.	52 4.4 7 33.1	On Ballinacourty Pt. Red over Carriekapane Rock; green, over rocks from Ballinacourty Pt., from E. to S.E. by E.; and bright in other directions	3a	52	10	1858
WATERFORD Hook Tower One bright fixed lt.	52 7.4 6 55.9	Tower, 115 ft. high, striped red and white horizontally, on E. side of entrance. Fog-gun every 10 min.	●	152	16	1859
Dunmore, Pier Head One red light	52 9. 6 59.5	West side of entrance. It is bright N. of pier	●	44	5	1826
Duncannon Fort Two fixed lights	52 13.2 6 56.	In one tower. The lower is only seen seaward	● ●	53 43	10 ..	1774
Duncannon N. One fixed light	.....	Half a mile N.N.E. $\frac{1}{2}$ E. of the fort. In one, with fort lights, lead in	●	128	16	1838
Spit of Passage	.....	One fixed red light, on piles .....	..	..	..	1867
Rosslare	.....	Ballygerry Bay, Wexford. Bright light on breakwater in progress .....	..	..	..	....

If a vessel is seen standing into danger, from any of the Irish lightvessels, a gun will be fired as a warning, and the two signal flags J D, of the Commercial Code, hoisted.

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SALTEES LIGHT-VES. One revol. bright lt., 3 flashes once ev. min.	52 2.4 6 40.	By day shows one mast with ball, and jigger mast. Fog-trumpet, blowing 5 secs., silent 29 secs., then blowing 5 secs., silent 4½ min.	..	38	10	1824 1878
TUSKAR <i>Red and br. rev. light</i>	52 12.1 6 12.3	Circular white tower, 110 ft. high. A flash of 10 secs. every 1 min.; bright, bright, and red alternately. Fog-bell and rockets.....	●	101	15	1815
LUCIFER SHOALS LT.-V. One fixed <i>red</i> light	52 21.5 6 9.3	In 21 fathoms, 2½ miles E. of shoals; has 3 masts; globe, and light, at main. Gong.....	●	33	9	1868
BLACKWATER BK. LT.- VESSEL One bright fixed light	52 30.2 6 5.	In 19 fathoms, 3 miles E. ½ S. from black buoy; has 3 masts; 2 globes at main. Gong	●	33	9	1857 1867
ARKLOW BANK S. LT.- VESSEL One br. rev. lt., ½ min.	52 40.8 5 57.2	In 25 fathoms, 2 miles from S. end of bank; has 3 masts; light, and half globe, over globe at main. Gong	●	39	10	1824 1867
ARKLOW BANK N. LT.- VESSEL Two bright fixed lights	52 53. 5 50.3	In 18 fathoms, 3½ miles S.E. by E. from N. end of bank; has 3 masts, lights, and gl. bes. on main and fore. Gong. (To be altered in spring of 1879 to revol. lt., showing 2 flashes once in every minute.....)	● ●	38 22	10 ..	1867
WICKLOW HEAD One bright intermit. lt.	52 57.8 6 0.1	Ten secs. bright; 3 secs. dark	1d	121	16	1818 1867
CODLING BANK LT.-V. (One <i>red</i> rev. lt., 20 secs.)	53 3.6 5 45.4	In 9 fathoms, at 4½ miles S.S.E. ½ E. from S. end of bank; has 3 masts; globe over half globe at main. Gong	●	39	10	1867
DUBLIN BAY KISH LIGHTVESSEL One rev. br. lt., 1 min.	53 18.8 5 56.8	In 10 fms., ½ mile off N. end of Kish Bank. Fog- gun, 2 discharges once in every ¼ hour	●	38	10	1811 1865
<i>Vanguard Wreck</i> <i>Green</i> revolving light every minute	53 13.2 5 46.7	Lt.-ves. painted gr'n 2 cables S.E. from the wreck of the Vanguard, which lies 8½ miles S. 24° E. from Kish lt.-ves. Gong.....	..	..	..	1875
Kingstown, East Pier One rev. lt., ½ min.	53 18. 6 8.	Tower, 41 ft. high; white and red flashes al- ternately. Masked N. of S.E. ½ S., to clear Muglin Rocks. A fog-bell	●	41	9	1822
Kingstown, W. Pier	.....	One fixed red light.....	●	36	2	1845
North Wall, East end	.....	One bright lt. A red ray to S., across river channel	6a	29	..	1820
Poolbeg One bright light	53 20.5 6 9.3	At mouth of River Liffey. Small lower lt. from half flood to half ebb Fog Bell.....	●	68	12	1768
HOWTH-BAILEY One bright fixed light	53 21.7 6 3.3	White tower, 42 ft. high, on S.E. pt. of Howth Peninsula. Fog Horn, 5 secs. every 20 secs.	1a	134	15	1671 1813
Howth, East Pier One <i>red</i> light	53 24. 6 4.	On pier-head	●	43	11	1818
Balbriggan One bright fixed light	53 36.8 6 11.	White tower, 53 ft. high, on pier, South side of entrance.....	●	42	10	1769
ROCKABILL One br. and red flash. lt.	53 35.7 6 0.5	Tower, 105 ft. high; flash every 12 secs.; br. seaward, from S. ½ E. to N.E. by N.; red to westward	1b	148	18	1860
Drogheda Two fixed br., 1 <i>red</i> lt. One <i>green</i> , five br. lts.	53 43. 6 15.	On sandhills, S of River Boyne. Changeable as sandbank shifts. E. & W. lts. in one, lead in On perches in inner channel	●	..	6	1842

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Dundalk						
One flash. light, 15 secs.	53 58.7 6 18.	Red screw piles in entrance. Bright lt. seaward from E. to S. $\frac{1}{2}$ E.; thence masked over Dunany Reefs to S.S.W. $\frac{1}{2}$ W.; thence red over S.W. banks to N.N.W. $\frac{1}{2}$ W. Bright lt. to channel, but masked from N. $\frac{1}{2}$ W. to E., over N.W. sandbanks. Fog-bell 6 str. a min.	4b	33	9	1855
Eight beacon lights	.....	Between the bar and quay .....	..	..	..	....
LOUGH CARLINGFORD						
1. Two bright fixed lts.	54 1. 6 5.	1. In one tower, 111 ft. high, on Haulbowline Rock. Lower lt. from half flood to half ebb. A small red light shown to N.E. Bell	●	101	15	1823
2. Two br. fixed leading lights		2. Two iron pile lighthouses, $\frac{1}{2}$ mile N. by W. from No. 1, 500 yards apart. In one N.N.W. $\frac{1}{2}$ W. lead through new cut in 16 ft.	8a	40	6	1873
3. One br. rev. lt. $\frac{1}{2}$ m.		3. On Greenore Point	●	29	9	1830
4. Red Pier light		4. On Greenore Pier	8a	33	5	1873
DUNDRUM BAY						
One intermit. red light	54 13.1 5 40.	On St. John's Point. Red 45 secs., dark 15 secs. Shaded across the bay to N. of W. by N. $\frac{1}{2}$ N.	1b	62	12	1844 1860
Ardglass Harbour	.....	One fixed red light at its head	●	18	6	1851
SOUTH ROCK LT.-VES.						
One revol. bright lt.	54 24.7 5 22.3	Supersedes S. Rock lt.-ho., and shows revol. lt. every $1\frac{1}{2}$ min. In 30 fms., 1 mile E. of Ridge Shoal. Fog-gun every $\frac{1}{2}$ hour .....	..	38	10	1877
Donaghadee						
One red or br. fixed lt.	54 38.6 5 32.	On pier-head. Red to seaward, from S.S.E. to N.E.; br. lt. obscured betw. S. $\frac{1}{2}$ E. & shore	●	56	12	1826
COPELAND						
One fixed bright light	54 41.7 5 32.	A white tower, 52 ft. high, on Small Copeland Island. Fog-bell	●	131	16	1796
Belfast Bay						
One red lt., and others	54 39. 5 53.	Pile ltho., with red lt., on Hollywood Bank; green lt., also on the Bank; 3 more green lts. towards Belfast; and a red lt. S.W. of Stone Beacon Fog-bell	5a ●	27 ..	5 ..	1848
Larne Lough	.....	One bright lt. on Farris Point. A sector of red light is now shown over the reef off Barr Point, and over the Hunter Rock, to between E.N.E. and N.E. by E.	● ..	42 ..	11 9	1839
MAIDENS						
Two fixed bright lights	54 55.8 5 45.3	Towers, 76 and 68 ft. high, white, with red belt. In one, N.W. by W., 800 yds. apart...	● ●	95 82	14 13	1828
RATHLIN						
One interm., 1 fixed lt.	55 18.2 6 10.7	Tower, 88 ft. high, with red belt, on Altacarry or N.E. point. Upper lt. intermit., br. 50 secs.; dark, 10 secs. Shown northward, from N.W. $\frac{1}{2}$ N. to S.E. by S., and to S. on Rathlin Island, from S.W. by W. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ S. Red lt. over Carrickvannan Rock. Lower fixed lt. does not show in Rathlin Sound. A fog-gun every 15 minutes	1b ..	243 182	21 ..	1856
LOUGH FOYLE						
Inishowen						
Two fixed bright lts.	53 13.6 6 55.6	E. tower, 49 ft.; W. tower, 74 ft. On Dunagree Point. In one, West, 153 yds. apart. A red sector from W. tower, 25 ft. below br. lt. over Tuna Bank, from E.S.E. to S.E. $\frac{1}{2}$ E.	● ●	67 92	13 15	1837
Warren Point						
Red and bright light	.....	Red to S betw. W. by S. $\frac{1}{2}$ S. & E. $\frac{1}{2}$ N.; white seaward from E. $\frac{1}{2}$ N. towards land, and up Lough Foyle from W. by S. $\frac{1}{2}$ S. to W. $\frac{1}{2}$ S.	..	..	..	....
Red Castle						
One fixed bright lt.	.....	On red piles, on outer edge of Ridge Shoal ...	..	25	..	1852
White Castle						
One fixed bright lt.	.....	On black piles, East side of channel .....	..	26	..	1848
Ture						
One fixed bright lt.	.....	On black piles, S.E. side of channel .....	..	25	..	1850
Cunnyberry						
One fixed bright lt.	.....	On red piles, N.W. side of channel .....	..	25	..	1848
Culmore Point	.....	A lantern on a mast .....	..	45	..	1848

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LOUGH FOYLE—(continued).						
Culkeeragh	.....	Bright light East side of entrance.....	..	50	..	1851
Boom Hall	.....	One fixed bright light .....	..	12	..	1859
Rosse Bay	.....	One fixed bright light .....	..	20	..	1859
Rock Mill	.....	One fixed red light, near the mill .....	..	15	..	1859
INNISTRATHULL	55 25.9	A white tower, 41 ft. high; on N.E. part of island	1b	181	18	1812
One br. rev. lt., $\frac{1}{4}$ min.	7 13.6					
LOUGH SWILLEY						
Dunree Head	55 11.8	Shown from a dwelling-house, visible betw. N.N.E. $\frac{1}{4}$ E. and S. $\frac{1}{4}$ E.	●	150	13	1876
One fixed bright lt.	7 33.2					
Buncrana Pier	.....	From pillar on pier extremity, betw. N. by W. $\frac{1}{4}$ W. and W. by S. $\frac{1}{4}$ S. ....	..	..	..	1876
One small red light						
Fannet Point	55 16.6	Tower, 36 ft. high; light red seaward; bright towards the Lough	●	90	14	1818
One red or bright lt.	7 37.9					
TORY ISLAND	55 16.4	White tower, 87 ft. high, on the N.W. point of island. Obscured by island to S.S.E.	1a	125	16	1832
One fixed bright light	8 15.					
ARANMORE ISLAND	55 0.9	Tower, 76 ft. high, on Rinawros Pt. Lt. shows altern. red & br. flashes (of equal intensity) ev. 20 secs. Lower lt. red to eastward over Stag Rocks, betw. N.E. by E. $\frac{1}{4}$ E. & E. by N.	1b	233	25	1865
One rev. red and br. lt.	8 33.6			200	..	1877
Lower red light						
RATHLIN-O-BIRNE	54 39.8	Tower, 65 ft. high, on W. side. Lt. is bright seaward from N.E. $\frac{1}{4}$ N. to S.S.E. $\frac{1}{4}$ E. Red towards mainland and sound.....	●	116	16	1864
One fixed br. or red lt.	8 49.9					
Killybegs	54 34.1	White tower, 47 ft. high. One bright fixed lt.	●	98	14	1831
St. John's Point	8 27.6					
Botten Island	.....	One br. fix. lt., with red sector, over Bullockmore Rk., betw. S.W. $\frac{1}{4}$ S. & S.W. by W. $\frac{1}{4}$ W.	●	66	12	1838
SLIGO						
Black Rock	54 18.	One fixed bright light in the bay	●	79	13	1836
	8 37.					
Oyster Island	.....	Two fixed bright lights; in one, S.S.E. $\frac{1}{4}$ E.	●	40	11	1837
Broadhaven	54 16.	On Gubacaschel Point. White to seaward; red towards West side of harbour.....	3a	87	12	1855
One br. or red fixed lt.	9 53.					
EAGLE ISLAND	54 17.	White towers, 87 and 64 ft. high. In one, E. by N. and W. by S., 132 yds. apart, clears all rocks off Black Sod Bay and Broadhaven	●	220	20	....
Two bright fixed lights	10 5.5					
BLACK ROCK	54 4.2	Tower, 50 ft. high, on W. extremity of Black Rock; red toward land, from N.E. by E. $\frac{1}{4}$ E. to S.E. by E. $\frac{1}{4}$ E.	1a	283	22	1864
One flashing lt., $\frac{1}{4}$ min.	10 19.3					
Black Sod Quay	54 5.9	On Blacksod Point. Light bright, but red between S.W. by W. and S.W. $\frac{1}{4}$ S.	3a	37	10	1866
One fixed br. or red lt.	10 3.6					
CLEW BAY.						
CLARE ISLAND	53 49.5	On North Point	●	341	27	1806
One fixed bright light	9 59.5					
INISHGORT ISLAND	.....	One fixed bright light	●	36	10	1827
SLYNE HEAD	53 23.9	On Illaunimmul Island. N. light-tower, 79 ft. high. Lt. rev.; once red, and twice bright. S. light-tower, 79 ft. high; fixed light. In one, N. $\frac{1}{4}$ E., 142 yds. apart, lead outside of rocks	●	126	15	1836
One rev. light, 2 min.	10 14.		..	115	14	....
One fixed bright lt.						

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GALWAY BAY.						
EERAGH ISLAND	53 8.9	Tower, 101 ft. high, white, with red belts, on West point	1b	115	16	1857
One rev. br. lt., 1 m.	9 51.5					
Straw Island	53 6.9	Shown betw. W. by N. $\frac{1}{2}$ N. & S.E. Vis. from inside Arran Isles. Buildings white .....	..	30	6	1878
One fixed red light	9 37.8					
Inisheer	53 2.7	Tower, 112 ft. high, with broad red belt, on S. pt. Lt. is red in direction of Finnis Rock ...	1a	110	15	1857
One bright or red lt.	9 31.5					
Mutton Island	53 15.2	On centre of island, off Galway .....	..	33	10	1817
One fixed bright lt.	9 3.1					
SHANNON RIVER.						
LOOP HEAD	52 33.6	White tower, 75 ft. high, 500 yds. from extr. of head. Lt. bright 20 secs., eclipsed $\frac{1}{2}$ secs. Shown from N.E. by E. $\frac{1}{2}$ E. to S.E. by E.	1a	277	22	1853
One intermit. br. lt.	9 55.9					
Kilradan	52 34.8	On the point. Red to seaward; bright to river	●	133	16	1824
One bright or red lt.	9 42.6					
Scattery Island	.....	Tower on S. end of island, River Shannon. Lt. is red over Rinana Showl, between N.N.E. and N.E. by E. $\frac{1}{2}$ E. Bright light eclipsed landward between N.E. $\frac{1}{2}$ E. and N.W. by W. $\frac{1}{2}$ W.	5a	50	10	....
One fix. br. or red lt.						
Tarbert	52 35.5	On the rock	3a	58	13	1834
One bright fixed lt.	9 21.8					
Beeves Rocks	52 39.	Red to N. of rock. Eleven small lights below Limerick	3a	40	10	1854
One bright or red lt.	9 1.3					
Tralee	52 16.2	On Little Samphire Island. Br. lt. seaward, from N. $\frac{1}{2}$ W. to W. by N. $\frac{1}{2}$ N., and red over anchorage from W. by N. $\frac{1}{2}$ N. to E. by S. $\frac{1}{2}$ S.	4a	56	9	1850
One bright or red light	9 52.9					
TEARAGHT ISLAND	52 4.5	Lighthouse, 57 ft. high. Lt. shown between S. $\frac{1}{2}$ E. to E. by N. $\frac{1}{2}$ N.	1b	275	22	....
Light revolving $1\frac{1}{2}$ min.	10 40.					
Valentia	51 56.	White tower, 48 ft. high, on Cromwell's Fort	●	54	12	1841
One fixed bright light	10 19.3					
SKELLIGS	51 46.2	On highest rock, $7\frac{1}{2}$ miles from shore. Lt. shown from lower tower, only visible to the southward between N.W. $\frac{1}{2}$ N. and E. by S. $\frac{1}{2}$ S. Upper tower not lighted	●	175	18	1826
One fixed bright light	10 32.7					
CALF ROCK	51 34.2	Tower red, with white belt, 102 ft. high	1b	141	17	1866
One br. flash. lt. 15 secs.	10 14.8					
Bantry Bay	51 39.2	White tower, 62 ft., with red belt, at East entrance to Bearhaven. Light shown from E. $\frac{1}{2}$ S. to N.W. by W. $\frac{1}{2}$ W.	●	55	12	1847
One fixed bright light	9 44.8					
Crookhaven	51 28.6	On Rock Island Point. Tower, 112 ft. high, with broad red belt, on S. point. Lt. red across rocks to Streak Head, from S. $\frac{1}{2}$ W. to S.E. by E. Bright to southward	3a	67	13	1860
One bright or red light	9 42.6					
FASTNET ROCK	51 23.3	Circular white tower, 92 ft. high, with red belt, on the summit of the rock	1b	148	18	1864
One rev. light, 1 min.	9 36.4					

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SWIATOI NOSS One fixed bright light	68 3.8 39 47.7	Light yellow tower; a beacon tower near.....	●	298	20	1863
Sosnovets Island One fixed bright light	66 29.3 40 43.4	Light yellow tower, 82 ft. high	●	139	13	1863
ARKHANGEL GULF One fixed & flashing lt. every 30 secs.	65 28.2 39 44.3	Octagonal yellow lt.-ho., of wood, on Zimnia Hills, right bank of Kaimeni River. Visible from N. 27° E. to S. 214° E.	●	349	20	1878
JLJGINSK One fixed bright light	65 12.3 36 51.5	Tower, 58 ft. high, on the N. height of island	●	140	17	1842
MOUDIUGA 1. One fixed bright lt. 2. Two fix. leading lts.	64 54.8 40 17. 64 51. 40 19.7	1. On a sandy hillock on W. side of island ... 2. At S. end of Moudiuga Id. Southern lt. from black tower, 57 ft. high, shown from S. by E. ½ E. by the W. to N.W. ½ N. Northern lt. is red, shown betw. N.W. ½ W. & N.W. ½ N. from white tower, 13 ft. high, 470 yds. N.W. of former. Lts. in line S.E. lead over Beresov Bar	● 4a 6a	140 66 20	16 9 6	.... 1875 1875
Bol Shoujmuia Island One bright fixed light	64 40.2 35 35.5	Yellow tower, 76 ft. high, on island in Gulf of Onga	●	146	12	1871
Solovetski A fixed light	65 7. 35 37.5	Temporary lt. to N.W. from church. Fog-bell	●	410	15	1863
Morjovets One fixed bright light	66 45.9 42 30.	540 yds. in-shore of N.W. point of island	●	150	14	1842
ORLOV One fixed bright light	67 11.2 41 20.5	Stone tower, 64 ft. high, on N.E. point of Cape Orlov, 1,200 yds. from the beach. Fog-bell. Arkhangel pilots.....	●	222	17	1842

NORWAY (West Coast).

FRUHOLM One bright fixed light	71 5.8 23 59.4	Red iron tower, 88 feet high, with white belt, near Ingö .. Aug. 25 to March 31.....	1a	148	20	1866
Hammerfest One fixed bright light	70 40.2 23 40.	On extreme point of Fuglesnes. Aug. 25th to April 19th	6a	30	11	1859
Hekkingen One bright fixed light	69 36. 17 50.5	North side of Hekking Island, Malang Fiord. August 15th to May 1st.....	4a	66	14	1859
ANDENÆS One fix. and flashing lt.	69 19.5 16 9.	Iron tower, red, 114 ft. high. Flash every 3 minutes. August 15th to May 1st	2d	143	20	1859
Lodingens Harbour One fixed bright light	68 24.5 16 3.	On East side of Hjertholm	6a	67	10	1862
Stangholm One bright fixed light	68 10.6 15 38.	Near Tranö-Vest Fiord.....	4a	42	11	1864
LOFOTEN ISLANDS. —(Lights not shown in summer, May 1st to August 15th.)						
Kjeöen, South Point	68 13.2	One fixed red light on Svolvær	●	54	4	1856
Orsvaag Harbour	68 11.7	One fixed bright lt. on N.E. side of Sagoen Id.	●	92	6	1862
Sjaaholmen	68 9.5	One fixed red light at Skraaven's Harbour ...	..	31	4	1856
Stamsund	68 7.2	Tornholm, South point. Keep the lt. in sight, to avoid the Stabben Rock	●	56	7	1859
HENNINGSVÆR One fixed & flash. lt.	68 8.5 14 14.0	Quitverdep, in Salvörings Sound. Flash every 3 minutes	●	113	16	1857
Svinö	68 2.8	One fixed red light near Balstad	6a	196	8	1857
Reine Harbour	67 55.8	One fix. bright lt. on S. pt. of Olenilsøens Id.	..	41	6	1862
Kloppen, or Gloppen	67 53.5	One fix. bright lt. at Sörvaagen, S. of entrance	6a	134	11	1857
Vaagö, or N. Hellig Vær.	67 26.	One fixed red light on N.E. point of island ...	5a	45	12	1859
Grytö, or S. Hellig Vær.	67 23.3	One fixed bright light on S.E. point	3a	106	17	1865
Nyholm Island One fix. white & red lt.	67 17. 14 24.	Stone tower on E. pt. of Id. Lt. shown from Aug. 15 to April 30. In W. channel, white betw. S.W. by W. ½ W. & W. by S.; red W. by S. to W. In N. channel, white from N. by E. ½ E. to N.E. ½ N.	6a	62	8	1876

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
STÖT One fixed & flashing lt.	66 56.6 13 28.9	On centre Seakier; guide to the harbour from the North. Flash every 2 minutes	4c	49	12	1867
TRAE ISLANDS Revol. br. lt. ev. min.	66 25.8 11 59.8	Iron lt.-ho., painted red, on Söe Id. Lt. via 12 secs. in ev. min. Shown from Aug. 15 to April 30 following	2b	119	17	1877
ANDERSBAK ISLAND One fixed red & br. lt.	66 15.8 12 19.	White concrete lt.-ho. on N.E. id. of Aas Vær Group. Lt. shows br. betw. W. by N. & N. through North to E. by S. & S.; thence red to S.E. by E. & E.; and thence br. to S. by W. & W. Br. lt. in sight bearing South of E. by S. & S. clears rocks N.W. of Aas Vær, and bearing W. by N. & N. leads South of Synst Islet. Bearing N.W. by W. & W. leads N. of Dounesø, but S. of Udøesø shoal. Lt. exhibited Aug. 15 to April 30. There is anchorage in 30 fms. close E. of Andersbak Id.	4a	50	11	1877
Brønøund One fixed bright light	65 28.5 12 13.5	On North side of Buholmen, at N. entrance...	6a	42	10	1862
Frøstø One fixed bright light	64 47.8 11 7.4	On the islet, in Folden Fiord. August 1st to May 16th	6a	36	12	1841
GJØESLINGERNE One fix. red and br. lt.	64 43.8 10 51.5	White stone tower on Haroldø Kraaka Rock. Lt. shows br. seaward betw. W. by S., leading 1 mile S. of Breggrundfald Shoal, and S. by W. & W.; red from S. by W. & W. to S.S.E. & E., betw. W. of Lokefald Reef and E. of Allegard Id.; white from S.S.E. & E. to E. & N., the latter bearing leading 2 or 3 cables S. of Grinna Rock; & red from E. & N. to E. by N. & N. Shown betw. Aug. 15 and April 30 following	4a	72	11	1877
VILLA One fixed and flash. lt.	64 32.8 10 41.9	On the island. A flash every 4 min. Aug. 1 to May 16. Pilot station near	2d	127	20	1869
Rødd One fixed bright light	64 22.5 10 27.4	On highest point of island. Aug. 1 to May 15	4a	276	16	1864
HALTEN ISLAND One flash. lt. ev. 4 secs.	64 10. 9 27.5	White stone tower. Lt. shown from Aug. 1 to May 15	2c	127	17	1876
Trondhjem One fixed bright light	63 27.5 10 27.5	On the fortress, on Munk Holm, opposite the town. Aug. 1 to May 16	6a	44	18	1840
Agdenås One fixed bright light	63 38. 9 49.5	On the pt. Visible int. and out of Trondhjem Fiord. Aug. 1 to May 16 .....	..	116	9	1831
Börö One fix. white or red lt.	63 44.2 9 18.	At East end of Hitteren Island, entrance of Skjören Fiord; red sector between N.E. and N.N.E. over Sles Skär	5a	52	9	1874
Terningen One fixed bright light	63 30. 9 9.	On the island. Aug. 1 to May 16	5a	160	12	1849
Ringholm Rock One fixed bright light	63 19.3 8 14.5	Yellow wood tower, 30 ft. high, half a mile from E. point of Eddo. Aug. 1 to May 16	5a	51	14	1849
CHRISTIANSUND						
Stavnes One fixed bright lt.	63 6.8 7 40.2	On N.E. point of Averø. Aug. 1 to May 16	5a	65	12	1842
Leervig One fixed bright lt.	63 6.3 7 43.5	On North side of island. Aug. 1 to May 16 ...	..	..	..	1863
KVITNES One fix. br. or red lt.	63 7.9 7 48.8	Wooden tower, painted white, on extr. of pt., at entr. of N. channel to Christiansund. Lt. shows red betw. W.S.W. and N.W. by N. leading N. of Haask Rock; white from N.W. by N. to N. by E. & E., leading 3 cables W. of Gølmødden; and red from N. by E. & E. to E.S.E. Shown betw. Aug. 1 and May 15 following	5a	60	9	1877
QVITHOLM One fixed and flash. lt.	63 1.3 7 14.5	Stone tower, 98 ft. high, on N.W. pt. of island. A flash of 12 secs. every minute	2c	134	19	1842
Biørne Sound One bright fixed light	62 53.9 6 49.3	On the eastern part of Moßen	5a	94	11	1871
OHNA One br. lt., red flash	62 51.8 6 33.	Red iron tower, 40 feet high, on Ohna Calif. Red flash every ½ min.	2c	143	18	1867
Ulla One fixed bright light	62 41.2 6 10.2	Fishing lt. on Kværnholm, S.W. of Ullaholm; from Jan. 25th to April 8th	6a	65	8	1874

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Lepsø Reef Lightvessel One fixed bright light	62 35.5 6 14.5	In 3 fms., on S.E. pt. of reef. Keop to westward. A bell every $\frac{1}{4}$ hour. Aug. 1 to May 16	●	25	4	1858
Erkna Island	62 33.3	Red light, spring fishery light	6a	160	11	1870
Synæs, Wiggeren Island	62 32.5	Bright fixed light, spring fishery light	6a	30	9	1870
Walderhoug One fixed red light	62 30.1 6 7.4	On South point of Walderö. Aug. 1 to May 16	●	41	4	1860
Aalesunds	62 28.7	One red fixed light on Moloen Point	●	12	5	1863
Alnæs, Godö Island	62 30.	Bright fixed light, spring fishery light	6a	30	9	1870
Hogsten One fixed and flash. lt.	62 28. 6 1.5	Flash every 3 min. On S.E. of Godö Island, Bred Sound	4d	41	12	....
BUNDÖ One fixed bright light	62 25. 5 35.1	Iron tower, 98 ft. high, white, with red belt, on W. point of island, Bred Sound. Aug. 1 to May 16	1a	161	22	1858
Flæsvär One fix. or changing lt.	62 18.8 5 36.5	Bright lt., except towards Skiäggren, when it changes to red every 3 secs.	●	56	12	1870
Frekhö Island One fix. br. and red lt.	62 10.5 5 22.7	Bright lt. from white tower, vis. betw. N. by W. $\frac{1}{2}$ W. and E. by N. $\frac{1}{2}$ N., but red from N.W. $\frac{1}{2}$ N. to N.W. by W., and from E. $\frac{1}{2}$ E. to E. $\frac{1}{2}$ N. From Aug. 1 to May 15 Fog-bell	..	68	11	1876
Wägsö One fixed red light	62 2. 5 7.8	On Skog Näs, N.E. point of island. Over Kræka and Melkua Shoals; or from N. by W. $\frac{1}{2}$ W. to N.N.W. $\frac{1}{2}$ W., it is eclipsed every 3 or 3 secs. From Aug. 1 to May 15 .....	..	57	12	1870
Hjertnesstrand One bright fixed light	61 59. 5 10.	On East side of Ulve Sound	6a	58	10	1870
Smörhavn One red or bright light	61 45. 4 55.	On Frossoen. Lt. red from N.N.W. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ N.; thence bright to E. $\frac{1}{2}$ S.	3a	..	..	1871
Stabben One fixed light	61 36. 4 57.6	Bright lt.; red towards Florö from E. $\frac{1}{2}$ S. ...	5a	50	12	1867
Kind Island One bright fixed light	61 33.6 4 46.7	On S.E. part. Shown eastward between N. by E. to S. by W.	6a	33	10	1867
Bonglevär One fixed br. or red lt.	60 48. 4 48.	On Bratholm. Bright seaward, but red to S. channel, or from S. $\frac{1}{2}$ W. to S.S.W.	6a	53	10	1870
HELLISÖ One br. rev. lt., 1 min.	60 45.1 4 43.1	Iron tower, 100 ft. high, red, with white belt. Beyond 8 miles it is dark between flashes ...	2b	154	19	1856
SKJELLANGER One fixed bright light	60 36.6 4 57.2	N.W. side of Holsenö Island. Guide to N. channel to Bergen. July 15 to May 16	5a	58	13	1853
Bergen One fixed red light	60 24. 5 18.3	On mole. Guide to Vaagen and chief anchor- ages. Aug. 15 to April 30	●	41	4	1839
Leeröen One fixed bright light	60 14.3 5 10.3	West side of island. Shown westward, from S. by W. to N.E. $\frac{1}{2}$ N. Obscured over Roug- neno. July 15 to May 16	●	57	4	1855
MARSTENEN ROCK One revolving red light	60 7.8 5 1.	Stone tower on highest part of Id., at Kors Fjord entr. Flash of 8 secs. every 20 secs....	b	120	17	1877
Pfir Holm One fixed bright light	60 5. 5 11.5	Bagholm Sound. July 15 to May 16	●	32	4	1849
Özhammer One fixed bright light	59 59.3 5 13.7	East side of Selbö. Eclipsed in direction of Nyleden over an arc of 17°. July 15 to May 16	●	130	4	1860

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SLOTTERØ One fixed bright light	59 54.5 5 4.5	Iron tower, 72 ft. high, red, with white belt, on N.W. pt. of islet. S. entrance to Selbø Fiord	2a	152	18	1859
Kingholmen Island One fixed bright light	59 53.2 5 13.3	Lt.-ho. on W. end of id. Lt. vis. from N. & W., clearing Tranø Id. to S. & E. From July 15 to May 15	4a	30	10	1876
Folgerøen One fixed bright light	59 48. 5 18.7	On island at Stoksund. July 15 to May 16 ...	●	51	4	1855
Leervig One fixed bright light	59 46.8 5 32.9	S.E. coast of Stordøen Id. From gable of white dwelling on S. pt. of Midtø Islet. Lt. shown betw. S.W. by W. and N.N.E. July 15 to May 15 following	5a	49	9	1878
Midtholmen One fixed red light	59 42. 5 24.2	Mosterhavn. Shown eastward, from N.N.E. to S.W. by W. July 15 to May 16	●	39	4	1855
Langevaad One fixed bright light	59 36.7 5 15.2	Lille Blegen. East side of Bommelø Island. July 15 to May 16	●	16	3	1855
Espevær One fixed bright light	59 35.1 5 9.3	S. entrance of harbour. Oct. 1 to April 1	●	75	6	1849
Ryvar den One bright fixed light	59 31.7 5 13.6	On point leading into Bommel Fiord. July 15 to May 16	●	63	6	1849
Roesar One fixed bright light	59 26.1 5 7.6	On Gitterø Rock, East side of entrance. Shown eastward, from N. & E. to W. by S. & S.	●	92	6	1860
Sårhoug One fixed bright light	59 25.2 5 14.7	On rock at N. entrance of Karmø Sound	5a	72	12	1846
Høievarde One fixed bright light	59 19.5 5 19.5	East side of Karmø	●	66	6	1858
Fæø One fixed light	59 22.7 5 10.7	Bright lt., but is red over Gangvar Rock .....	..	45	9	1871
UDSIRE Two fixed bright lights	59 18.3 4 52.7	Two red stone towers, 40 ft. high, on W. side of island. N.W. and S.E., 220 yards apart, throughout the year	2a	255	21	1844
Kobbervig One fixed red light	59 17.2 5 19.7	On E. side of Karmø; on N. side of entrance...	●	31	3	1863
Bukke Sund One fixed bright light	59 13.4 5 27.6	E. side of Bukken Island. Oct. 1 to April 1 ...	●	..	4	1849
Skudes Ness Havn	| ..... |	One fixed bright light. Oct. 1 to April 1 .....	..	..	4	1849
Skude Ness One fixed bright light	59 8.4 5 18.	S.E. point of Karmø. Kept in sight, clears the Ostboen. Oct. 1 to April 1	●	77	6	1799 1840
Vigholmen One bright red light	59 8.4 5 16.8	On islet, off Skudes Ness Harbour; must be kept in sight, on the port hand, when approaching	●	..	4	1849
Fieldø One bright fixed light	59 5.3 5 34.4	On Vindhoug, Klubben Islet, North side of channel to Stavanger. July 15 to May 15 ...	●	..	6	1849
HVIDINGSØ One fixed and flash. lt.	59 3.7 5 24.4	White stone tower, 85 ft. high. Bright flash, every 4 min., throughout the year	2d	149	21	1700 1853
Dusevig One bright fixed light	58 59.8 5 41.3	On Varnæs, S. point of bay. For pilots' use...	●	..	6	1865
Stavanger One bright fixed light	55 58.2 5 44.3	On Valberg tower. Sept. 15 to March 15	●	..	4	1863

Name and Character of Light.	Lat. N. Long. E. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established.
Tunge Ness One bright fixed light	59 2.1 5 34.2	On S. part of Bukke Fiord; on West side of channel to Stavanger. July 15 to May 15...	6a	31	10	1828
Fladhølm One fixed bright light	58 55.3 5 33.7	On N.W. point; eastward of Rot.....	6a	43	10	1862
Lille Feiste One fixed red light	58 49.5 5 30.9	On S.E. pt. of islet, at $\frac{1}{2}$ miles N.E. from Joederens Point. All the year	4a	68	12	1859
Obrestadbrækka One fix. & flash. lt. $\frac{1}{2}$ m.	58 39.5 5 33.5	On gable of stone-house; lt. obscured to S. to $\frac{1}{2}$ mile from land off pt. near Haa. Life-boat	3c	109	16	1873
EGERÖ One fixed bright light	58 26. 5 52.2	Iron tower, 105 ft. high, red, with white belt, on W. point of island. Throughout the year	1a	154	24	1864
Grundsund Holm One fixed br. light	58 27.8 5 53.1	On N.W. point of island, on S. side of channel S. of Egerö. Throughout the year.....	5a	43	11	1855
Vibberodden One fixed br. light	58 25.3 5 59.6	S.E. point of Egerö, West side of Egersund...	5a	73	12	1855
Varnäs One fixed bright light	58 10.6 6 37.3	South point of entrance to Lister Fiord	5a	90	12	1836
LISTER One br. flash. lt. 4 secs.	58 6.5 6 34.2	One flashing lt. every 4 secs., instead of three fixed lights on Gunnarshoug, West point of Lister Land. Throughout the year. Fog-trumpet, 2 blasts once in every minute	2a	130	19	1853
South Katland Islet One fixed red or br. lt.	58 3.5 6 50.6	Farsund Channel. Shown from wh. bldg. at S.W. pt. of islet, br. seaward betw. S.W. and S., red betw. S. and S.E. $\frac{1}{2}$ E., & br. from S.E. $\frac{1}{2}$ E. to E. Also br. to northwd. betw. N.W. by W. $\frac{1}{2}$ W. and N. $\frac{1}{2}$ E., and towards Faerokalven betw. W. and W. $\frac{1}{2}$ N. At N. extr. of Faerokalven a reflector is placed to reflect a sector of 12° of light towards E.N.E.	4a	51	10	1878
NAZE OF NORWAY, or LINDESNÆS One fixed and flash. lt.	57 59. 7 3.	White and red tower, 33 ft. high. Flash every minute. Throughout the year	1d	164	24	1853
Mandals Ryvingen One bright lt., red flash	57 58.1 7 29.7	On S.W. part of Ryvingen; red flash every half minute	3d	135	18	1867
Hatholm One bright fixed light	58 0.2 7 27.2	On S. point of island, in Manne Fiord	6a	64	10	1867
CHRISTIANSAND FIORD Odderö One fixed bright lt.	58 8.2 8 05	On S.W. point of island .....	..	27	10	1832
OXÖ One fixed bright lt.	58 4.4 8 3.6	Round white tower, 92 ft. high, on S. pt. of island, entrance of Christiansand Fiord	2a	139	19	1853
Gronningen Islet One fixed red light	58 5.1 8 5.8	Christiansand Fiord, E. side of entr. White building on summit of islet. Light shown westward between S.E. and N.N.W.	4a	50	9	1878
Årendal One fixed bright light	58 26.3 8 47.4	Yellow building on Sandvig Point, W. side of channel. The lt. is red to W. of S. $\frac{1}{2}$ E. ...	6a	43	11	1844
TORUNGEN ISLANDS Two fixed bright lights	58 24.1 8 47.7	On Outer Torungen and Inner Torungen, N.N.E., 1,200 yards apart	2a 2a	134 134	20 20	1844
Stangholmen Island One fixed red light	58 42.7 9 15.	Yellow building on East point. Light shown from N. $\frac{1}{2}$ E. by N. and E. to S. $\frac{1}{2}$ W.	5a	34	10	1855
Kills Fiord Two red fixed lights	.....	One on Stafseng; one on Strömtangen, near Rabbet Point. In one, lead through Stangbo Channel.....	5a 6a	80 25	7 6	1874 1874

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
JOMFRULAND One br. rev. lt., $\frac{1}{2}$ min.	58 52.2 9 36.3	White tower, 86 ft. high, on a low island. Dark between flashes beyond 8 miles. Fog-trumpet 3 times in a minute	2d	134	20	1839
Langøtangen One fix. br. or red lt.	58 59.7 9 45.8	Yellow building on S. pt. of island. Lt. shows bright betw. S.S.W. and S.S.E. $\frac{1}{2}$ E., & red over dangers outside those bearings. Obscured to northward.....	6a	41	10	1839 1876
Frederiksværn One fixed red light	58 59.5 19 4.5	Stavernsø South point, East side of channel, visible eastward from N. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ W. July 15th to June 1st	6a	140	8	1855
SVENÖKE One bright flashing lt.	58 58.5 10 9.5	At the entrance to Laurvik Fiord white lighthouse. Two consecutive bright flashes of 8 secs. every 2 min.	3a	89	15	1874
CHRISTIANIA FIORD.						
FÆRDER One fixed bright lt.	59 2. 10 32.1	Red tower, 134 ft. high, with white belt, on Lt. Færder, or Tristenen. Fog-whistle ...	1a	154	24	1857
Torbiørnskjær One fix. & flashing lt.	58 59.7 10 47.5	Stone tower on rock, on E. side of Christiania Fiord entr. Bright lt. with red flash every minute. Fog-bell, 5 strokes once ev. min.	6c	90	15	1872
Hømlungen One fixed bright lt.	59 1.4 11 2.3	West side of entrance to Lauersvølg. Shown from W. by N. $\frac{1}{2}$ N. by S. to E.S.E.....	6a	24	8	1867
Torgauten Island One fixed bright lt.	59 9.1 10 50.	On S. point. Shown from W. $\frac{1}{2}$ S., by S., to N.W., and is red over Strudskrakken Rocks	6a	37	12	1859
FULEHUK ISLAND One fix. & flash. lt.	59 11. 10 36.7	White tower, 41 ft. high. Flash every 3 min. Fog-bell sounded 45 secs., interval 15 secs....	4d	57	14	182 1850
Torgersø One fixed red light	59 15.5 10 30.9	On N.W. point of island. July 15th to June 1st	..	10	3	1851
Moss Havn One fixed red light	59 26.4 10 39.8	East side of canal. October 1st to March 31st	..	10	3	1857
Eastø One fixed bright lt.	59 23.3 10 33.	Yellow building on N.E. point of island. Shown to N. and E., from N.N.W. to S. by W. $\frac{1}{2}$ W.	6a	38	12	1840
Rød Point One fixed bright lt.	59 31.9 10 26.3	East side of entrance to Drams Fiord. July 15th to May 31st.....	●	35	6	1840
Filtvedt One fixed bright lt.	59 34.7 10 37.7	On W. shore. July 15th to May 31st. Fog-bell.....	●	24	6	1840
Drobak One fixed red light	59 39.5 10 38.2	From Custom-house. Shown westward betw. S. $\frac{1}{2}$ W. and N.N.W. July 15 to May 31.....	●	23	6	1878
Digerhovedet One fix. br. or red lt.	59 43.5 10 35.8	On E. side of Fiord. Lt. is red from S.W. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ W.; thence bright by W. to N.N.W. July 15th to May 31st. Fog-bell.....	..	..	..	....
Steilene Island One bright fixed lt.	59 49.4 10 36.5	On middle of island. Shown to E. and S., from N.N.E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S. July 31 to May 31. Fog-bell	6a	22	6	1837
Høg Holm One red fixed light	59 53.1 10 43.5	New yellow tower on N. pt. of principal channel to Christiania. Lt. vis. betw. W.S.W. & E. $\frac{1}{2}$ N. July 15th to May 15th. Fog Bell altern. 2 and 15 strokes	6a	20	6	1826 1876
Dynen Rock One fixed bright lt.	59 53.7 10 41.9	White wooden building. Lt. shown between E. by N. and W.S.W. July 15 to May 31... Fog-bell	6a	18	8	1875

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
SWEDEN.						
WORD KOSTER One fixed and flash. lt. One fixed bright light	58 54.2 11 0.6	North and South, 78 yds. apart. North lt. flashes every 3 min. Shown to South from S.E. to N.E.	3c 4a	214 ..	15 ..	1859
WÄDERBÖD One red & bright rev. lt.	58 32.7 11 2.3	Red iron lighthouse, 62 feet high, lt. red and bright alternately, every $\frac{1}{4}$ minute. Gong	2b	108	45	1867
HÄLLÖ One br. flash. lt., 5 secs.	58 20.2 11 13.4	Tower, 66 feet high, half a mile S.E. from Salö beacon	2b	128	20	1868
Mäseklär One fixed red light	58 5.8 11 20.	Iron tower, 72 ft. high, red & white, near Pilot-station of Karingö. Two guns in answer to fog-signal	2a	114	10	1866
PATERNOSTER ROCKS One rev. bright light	57 53.8 11 28.6	Red iron ltho., 105 ft. high, on the Hammakär. A bright flash every $\frac{1}{4}$ min. Fog-bell	1b	117	20	1868
THE KATTEGAT.						
Marstrand One fixed bright light	57 53.6 11 35.	On Koön; W. point of entrance. Shown seaward from N. $\frac{1}{2}$ E. to W. $\frac{1}{2}$ N.	5a	..	..	1868
Göteborg One br. or red fixed lt.	57 41.2 11 50.5	On Fort Elfsborg; North side of channel	●	44	10	1859
WINGA, or Vinga Island One fixed and flash. lt. One fixed bright light	57 38.1 11 36.3	N.E. $\frac{1}{2}$ N., and S.W. $\frac{1}{2}$ S., 138 yds. apart. N.E. lt. flashes every 3 min. Powerful fog-horn; signal-guns	4c 4a	88 88	14 15	1854 1841
Gefveskar	.....	One fixed red light.....	●	20	..	1866
Buskär Islet One fixed red light	57 38.3 11 40.8	From red house at entrance to Göteborg. August 15th to April 15th	●	82	10	1841
Böttö One fix. & flash. br. lt.	57 39. 11 43.3	On a house; in Winga Sound. Shows as flashing lt. betw. S. 15 $\frac{1}{2}$ ° W. & S. 35 $\frac{1}{2}$ ° W., fixed from S. 35 $\frac{1}{2}$ ° W. to S. 55 $\frac{1}{2}$ ° W., flashing from S. 55 $\frac{1}{2}$ ° W. to S. 75 $\frac{1}{2}$ ° W., and fixed over remainder of circle. Aug. 15 to April 15	●	45	10	1841
NIDINGEN ROCK Two fixed bright lts.	57 18.5 11 53.5	Stone towers, each 60 feet high, E.N.E. and W.S.W., 98 ft. apart. Fog-bell in a steeple to N.W. Three guns in answer to fog-signals	3a 3a	66 66	12 12	1832 ...
Warburg One flashing lt. $\frac{1}{4}$ min.	57 6.3 12 13.5	Iron tower, 54 ft., chequered red and white. A red and white flash every $\frac{1}{4}$ minute	3b	70	12	1871
MORUP TÄNGE POINT One fixed bright light	56 55. 12 22.	Iron tower, 90 ft. high, white, with two red belts, on the point, N.W. of Falkenberg ...	2a	95	16	1843
Halmstad One red fixed light	56 39.5 12 51.3	On W. pier head; to be kept to port. Not accessible in bad weather	●	..	4	....
Tylö Flash. lt. every 10 secs.	56 38.8 12 42.	On tower, 42 ft. high, on Laholm Islet, West of Halmstad	3c	56	12	1870
KULLEN One rev. bright light	56 18.2 12 27.	White tower, on hill-side, at Arildsläge. Lt. revolves once in ev. 2 min., showing a brighter light for about 30 secs. while the reflector backs the flame	●	288	20	1843
SVINBADARNE LT.-V. Two red fixed lights	56 10.5 12 30.7	Lt.-Ves. on W. side of Jungars Shoal. Two masts, with red ball on each. Fog-trumpet, 3 blasts once every $\frac{1}{4}$ minute. Lightvessel temporarily removed, December 1870	●	28	6	1866

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Helsingborg One fixed <i>red</i> light	56 3. 12 42.	Iron tower, 23 ft. high, on N. pier-head.....	●	27	7	1833 1866
Råå, near Helsingborg	.....	A fishing light, bright and green .....	..	..	..	....
Helsingör, or Elsinore 1. One bright fixed lt. 2. One fixed <i>green</i> lt.	56 2 1 12 37.4	1. On N.E. tower of Kronborg Castle..... 2. On South pier	4a ●	110 17	12 7	1772 1830
NAKKE HEAD Two fixed bright lights	56 7.2 12 20.8	On N.E. point of Sissølland, W.N.W. & E.S.E., 438 yds. apart	● ..	147 98	12 8	1772
HIELM ISLAND One fixed and flash. lt.	50 8. 10 48.5	Flash every 4 min. A white flag, with blue stripes, when ice in the Great Belt	2c	164	18	1856
Spotsbiørg One flashing light	55 58.6 11 51.6	On East side of entrance to Ise Fiord. Flash every 20 secs. ....	..	123	11	1865
HESSELØ One fixed bright light	56 11.8 11 42.8	Tower, 56 ft. high; red and yellow bands.....	2a	115	16	1855
SCHULTZE GRUND L.-V. Two bright fixed lights	56 8.9 11 11.1	At the entrance to the Belts. Two masts; red ball on each	● ●	30 ..	10 ..	1869
FORNESS One rev. br. lt., $\frac{1}{2}$ min.	56 26.6 10 57.6	2½ miles N.E. $\frac{1}{2}$ E. of Greenaa Haven.....	●	69	13	1838
Anholt Lightvessel One fixed bright light	56 45.7 11 51.3	In 16 fathoms, 1 mile East of Knob Reefs. Gong in fogs	●	26	9	1842
ANHOLT ISLAND One rev. br. lt., 25 secs.	56 44.3 11 39.2	Tower, 103 ft. high, $\frac{1}{2}$ mile from E. point. A fixed lt. is shown to E., 57 ft. lower, when lightvessel is not in her station.....	●	122	14	1852
Kobbergrund Light-Ves. Three bright fixed lts.	57 8.9 11 22.8	In 10 fathoms, S.E. by S., from Nyvager. Lights triangular	● ..	41 29	8 ..	1853
LIIM FIORD 1. Two fixed bright lts. 2. Two fixed <i>red</i> lights	.....	1. Shown at Egeaa Kloster Point. In line, N. 52° W., lead over bar into Liim Fiord ... 2. On Hals Pier. In line, lead up to Hals road- stead .....	.. ..	.. ..	.. ..	1878 1878
Læso Channel Lt.-Ves. One fixed bright light	57 12.7 10 41.2	In 10 fathoms, East of Dvale Ground Gong...	●	30	9	1852
Læsoe One fixed <i>red</i> light	.....	On South mole of the harbour, on N.W. coast of Læsoe .....	..	15	..	1872
Trindelen Lightvessel One fixed bright light	57 25.8 11 16.6	In 7 fathoms, $\frac{1}{2}$ mile E.S.E. from shoal; a red ball at the fore. Gong or Fog-trumpet, giving 2 blasts once in ev. 2 min., in fogs ...	●	31	9	1829
Frederikshavn One fixed <i>red</i> light	57 26.1 10 32.7	On S. pier-head of Fladstrand; also a bright lantern light	●	23	8	1834
Hirtsholm One rev. br. lt., $\frac{1}{2}$ min.	57 29.2 10 37.6	Low white quadrangular tower.....	●	43	10	1838
Aalbæk	.....	Two red fishermen's lights	●	12	5	1846
SKAGEN, or SCAW One fixed bright light	57 44.1 10 37.9	Red brick tower, 126 ft. high, $\frac{1}{2}$ mile West of point. Ice signals shown. Light brightest between W. $\frac{1}{2}$ S. and S.W. $\frac{1}{2}$ S.	1a	144	18	1664 1866
SKAGEN or SKAW LT.- VESSEL One rev. <i>red</i> lt. ev. $\frac{1}{2}$ m.	57 46.0 10 43.3	Painted red with white cross, red globe on fore- mast head. Moored at extr. of Skaw Spit in 20 fms., $3\frac{1}{2}$ miles N. 71° E. from Skaw light- house. Fog-trumpet, 1 blast every 2 min....	..	31	..	1878

Danish lightvessels will remain at their station as long as the ice permits, and from the forestay of each lightvessel a bright riding light is shown at 6 ft. above the rail.

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
THE SOUND.						
Landskrona Two fixed lights	55 52. 12 49.8	On quay, on North side of harbour. In one, E. by S. $\frac{1}{2}$ S., lead small craft in. Inner lt. red	●	22	8	1866
Helsingør, or Elsinore 1. One fix. lt., red flash. 2. One green fixed lt.	56 2.1 12 37.4	1. On N.E. tower of Kronslott, or Kronborg Castle. Fixed bright light with red flash every half minute 2. On South pier.....	3c ●	110 17	15 4	1772 1830
HVEEN ISLAND One bright flashing lt.	55 55.2 12 40.5	On N.W. pt. of Id. The tower is white, 29 ft. high. Lt. shows a bright flash every 10 secs., not visible East of S. by E. $\frac{1}{2}$ E.	4b	98	12	1871
Vedbek Two bright fixed lights	55 51. 12 34.5	In one, W. $\frac{1}{2}$ S., show direction of telegraph cable	●	40	10	1856
Taarbek One green light	55 47. 12 36.	On North mole, from Aug. 1 to Jan. 1.....	..	15	..	1871
Skovs Head Harbour	55 45.	One red light on South breakwater .....	..	..	..	1870
COPENHAGEN						
Tre Kroner Battery 1. One fix. & flash. lt. 2. Two red leading lights	55 42.2 12 37.1	1. Flash every 3 min., E. side of Tre Kroner battery	4d	41	11	1858
		2. From small iron towers on Tre Kroner battery, 185 yds. apart. In line, N. 29° W., lead through Konge Deep.....	..	47	11	1877
			..	37	10	....
Provstenen Battery Two red leading lts.	.....	From poles. In line, S. 15° W., lead between Middel Ground and Middel Pult .....	..	43	5	1877
			..	33	..	....
NORTH ROSE SHOAL One fix. & flashing lt.	55 38.2 12 41.4	Granite tower, in 14 ft. water, 1 mile S.E. by E. from Kastrop Harbour. Fixed bright light with red flash every 30 secs.	3c	45	10	1877
Dragør or Drogden Lt.-V. One rev. light, 20 secs.	55 33.2 12 43.2	200 yds. S.W. by S. of Quartus Ground, in 4 $\frac{1}{2}$ fathoms. Gong in fog. Pilots on board...	●	31	10	1833
			..	..	..	1868
Dragør Harbour 1. One red fixed light 2. Two red leading lts.	55 36. 12 40.5	1. On North pier .....	..	..	2	1869
		2. From small towers, 412 yds. apart, at N. end of t. wn. In line, S. 18° W., lead through N. end of Hollaender Deep.....	..	62	12	1877
			..	31	10	....
Lomma Two fixed green lights	55 40.6 13 4.5	E. $\frac{1}{2}$ N. and W. $\frac{1}{2}$ S., 33 yards apart. In line lead up to entrance .....	..	20	..	1876
			..	15	..	....
MALMÖ Bright red & green fixed lights	55 36.8 12 59.8	Bright lt. from tower, 44 ft. high, on W. pier-head. A br. lt. is also shown from mast with triangle, on new W. mole-head constr. ting. Red & green leading lts. exist, but are to be superseded by new leading lts. Pilots	●	49	8	1822
			..	19	..	1878
Sislen Bank Lightvessel One fixed bright light	55 38.3 12 57.3	Lt.-ves. red, moored 1 mile E. of bank. Fog Bell, 3 strokes once a minute Pilots	4a	22	8	1876
Kalk Grund Lightvessel One fixed red light	55 36.5 12 54.3	Flint Channel. Vessel painted red, with red ball at mast-head; moored $\frac{1}{2}$ mile S.E. of Kalkgrund. Fog Bell, 2 strokes once a minute .....	..	..	..	....
FALSTERBO One fixed bright light	55 23.7 12 49.3	Stone tower, 82 ft. high, with two red belts, within the reef, on point S.W. of town. Aug. 1 to May 15	2a	78	13	1843
Falsterbo Lightvessel Two fixed bright lights	55 18.2 12 47.6	In 5 fathoms, $\frac{1}{2}$ mile S. of extreme point of reef. Two masts and balls. Fog Bell	●	37	8	1844
			..	39	6	1842
Kiøge Pier Two fixed bright lights	55 27.1 12 11.5	On two masts: in one, lead into the harbour. Pilots obtained here .....	..	33	..	....
STEVNS CAPE One rev. br. lt., $\frac{1}{2}$ min.	55 17.4 12 27.5	1,506 yds. N.E. of Holerup church. New white stone tower, 72 ft. high (1878), close to old lighthouse.....	●	209	20	1818
Faxø One green light	55 13. 12 10.	On East pier-head. Shows bright towards Bogestrom Bay	●	18	6	1867
Rodvig One red light	55 15.1 12 22.9	On eastern end of jetty	●	18	2	1860
MÖEN ISLAND One fixed bright light	54 56.8 12 32.7	On S.E. point	5a	82	12	1845
GIEDSER POINT One fixed bright light	54 33.8 11 58.	Tower, 33 ft., $\frac{1}{2}$ mile inland of South point of Falster. The dangerous Trindelen Ground bears S.E. $\frac{1}{2}$ S.	3a	66	12	1802
			..	31	..	1851
Giedser Reef Lt.-vessel Rev. red lt. ev. $\frac{1}{2}$ min.	54 28 12 9.5	Painted red with white cross, red ball at fore-mast head. Moored in 6 fms. near S.E. extr. of reefs. Fog-trumpet (worked by hand), 1 blast every minute.....	..	31	..	1878

Lighthouses.

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
GREAT BELT.						
SEIRØ One rev. br. lt., 2 min.	55 55.2 11 5.1	Tower, 52 ft. high, on N.W. point of island ...	●	108	15	1862
REEF NESS One fixed bright light	55 44.6 10 52.4	On extreme point. Shown from E. $\frac{1}{2}$ S. to S.E. by S. by the South	4a	65	13	1844
Kallundborg One fixed bright light	55 41.2 11 5.1	On Gisseløre Point.....	●	25	9	1835
Odense Fiord One bright fixed light	.....	On Hals Point, West point of entrance .....	..	..	..	1870
Romsøe One fixed red light	55 30.8 10 48.2	Octagonal tower, 21 ft. high, on E. coast of island.....	5a	51	7	1869
Halskov One fixed bright light	55 20.3 11 7.6	Near Korsør. A second light is shown occasionally	●	52	10	1727
Korsør Two fixed bright lights	55 20.2 11 8.5	Two white towers on N. side of harbour; in line they lead in	●	24 26	9 ..	1793 1846
SPROGØ One rev. br. lt., 2 min.	55 19.9 10 58.4	Tower, 43 ft. high, yellow and red bands, on East and highest point.....	●	134	17	1868
Knuds Head One fixed bright light	55 17.4 10 51.3	.....	5a	60	10	1760
Slipshavn One fixed red light	55 17.1 10 49.7	On Slips Point Battery, Nyborg Fiord	●	20	8	1846
Nyborg Harbour	.....	Two fixed red lts. on pier-head, when the mail is expected. Two fix. br. lts., shown from white sheds on fortress ground, W. of Nyborg Harbour. In one N. $\frac{1}{2}$ W. lead into bay	..	..	..	....
Agersø One fixed red light	55 11.1 11 12.7	S. point of Helleholm, Omø Sound	●	25	8	1846
Vsøirø One rev. br. lt., $\frac{1}{2}$ min.	55 2.3 11 22.3	Square tower, 29 ft. high, on N.E. point of island.....	●	51	10	1845
Tranekjær One bright fixed light	54 59. 10 53.	To S.E. of Tranekjær Castle, on E. coast of Langeland	●	27	9	1858
Taars Two fixed bright lights	54 52.7 11 2.2	On N.W. point of Laaland. East lt. seen all round. West lt. through channel. E. $\frac{1}{2}$ S., 663 yds. apart. In one, lead in.....	●	32 18	8 5	1857
Svendborg Two fixed bright lights	55 3.5 10 37.	On the pier, October to March. Also green and red lights for mail boats .....	..	14	6	1854
Gaabense Two fixed lights	54 56.5 11 53.	On North coast of Falster; for mail boats.....	●	12	4	1857
Vordingborg Three fixed lights	55 0.2 11 55.2	On S.E. coast of Sjælland; for mail boat	●	..	4	1857
Bagenkop One red fixed light	54 45. 10 40.4	On N. pier-head. Sept. 1 to March 1.....	..	16	4	1869
FAKKEBIERG One bright fixed light	54 44.4 10 42.2	On a hill, 1 mile from the S. point of Langeland	●	129	14	1806

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established.
LITTLE BELT.						
Aarhuus 1. One fixed bright lt. 2. Three fixed br. lts.	56 9.3 10 13.5	1. On S. end of mole. Red lt. also, occasion- ally, on N. pier 2. Three lts. placed on a triangle; the two lts. forming the base when in one lead into channel	●	39	6	1846
Bletterhage Point One fixed bright light	56 5.7 10 31.	On gable of new building on point; S.W. point of Helganes.....	6a	54	11	1872
Thund One fixed bright light	55 57. 10 26.8	On church tower, 53 ft. high, on S.E. end of island.....	5a	100	11	1846
Horsens	.....	Two gas harbour lights .....	..	28	6	1858
SAMSÖ One fixed and flash. lt.	55 46.2 10 33.4	Round tower, 45 ft. high, on Vestborg, or S.W. point of island. Flash every third min.	3d	118	15	1858
Rogense One red fixed light	55 34. 10 5.1	On pier, North coast of Fyen.....	●	20	3	1861
Fredericia One red fixed light	55 33.6 9 45.7	On North mole .....	..	28	4	1842
Middelfart	.....	Light on pier-head, on dark nights	●	18	3	1854
Baagö One fixed bright light	55 17.7 9 48.	On S.W. point of island	●	39	..	1842
Assens One fixed bright light	55 16.3 9 53.6	White iron tower, 17 ft. high, on pier-head ...	●	20	5	1777
Aarö One bright fixed light	55 15.7 9 42.9	Slesvig, E. coast. Tower, 81 ft. high, on S. mole. A lantern light, on S. end of Aarö island, when packets pass	●	26	9	1777
Apenrade One red fixed light	55 2.5 9 26.	On S. mole in harbour, till 1 a.m. Sept 15 to April 1	●	16	3	1850
Ærøskjöbing One fixed light	54 53.4 10 25.6	On ship quay. Sept. 5 to May 1	●	16	4	1850
Als Island One bright fixed light	54 51.3 10 25.6	Square tower on Keke Ness, or S.E. point.....	4a	78	12	1845
Flensborg Fiord One fixed bright light	.....	From lightvessel moored off N. side of Kalk- grund, S. side of entrance. Pilots	6a	26	7	1876
Sönderborg Two red lights	54 55. 9 48.3	On poles, near the castle. In line, lead in ...	●	19	3	....
Flensborg One green light	54 47.8 9 27.7	At the landing place. Also a red lt. for mail steamer.....	●	15	2	....
Sliminde One red fixed light	54 40.2 10 2.5	Tower, 44 ft. high, on mole, N. of harbour ...	●	49	12	1841
Eckernförde One bright fixed light	54 28.2 9 50.3	On the pier-head. When bearing N.W. by N., shows best anchorage .....	●	..	..	....
KIEL FIORD; Bulk Pt. One bright fixed light	54 27.4 10 11.9	Circular tower, 77 ft. high, on W. pt. of entr. to Kiel Fiord. Fog trumpet 5 secs. ev. 40 secs. Pilots	3a	98	14	1815
Frederichsørt 1. One br. fixed lt. 2. One br. or green lt.	54 23.5 10 11.7	1. On the ramparts 2. Within point of reef; bright westward; green eastward	5a 6a	56 38	9 8	1867 1815
Düsternbrook One red fixed light	.....	Iron tower, in front of marine depot	●	19	6	....
Kiel One green fixed light	54 19.2 10 8.7	On the pier	●	15	2	....
Sandpit, two red lights	.....	On E. shore of Fiord; in one S.W. 78 yds. apart	●	20	5	1872

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
FEMERN BELT One br. rev. lt., $\frac{1}{2}$ min.	54 29.6 11 14.5	Marlen tower, 52 ft. high, on Ohlenborg-huk, N.E. point of Femern Island	b	94	12	1832
FEMERN SUND Three bright fixed lts.	54 26.3 11 1.2	1. On S.W. end of Femern Id., at Flugge Wood 2. On Strukamp Point Spit, $\frac{3}{4}$ miles to S.E. $\frac{1}{2}$ S. Leading lights for Femern Sound..... 3. Small fixed light for mail steamers	4a 6a ..	57 18 ..	13 8 ..	1871 18 1864
Neustadt One rev. br. lt., 2 min.	54 5.3 10 51.8	Square tower, 31 ft. high, on Pelzer Point, $\frac{1}{2}$ miles S.E. by E. of entrance to Neustadt ...	5a	47	11	1842
SWEDEN.		Baltic, West Shore.				
Trelleborg One bright, one green lt.	55 22.5 13 9.3	On the quay in harbour; in one, N.N.E. $\frac{1}{2}$ E., they lead in .....	..	..	..	1863
Ystad Harbour One red, one bright lt.	55 25.5 13 50.1	High lt. bright; red lt. at entrance; in one, N.E. by N. Also a red lt. on W. pier-head	4a ..	51 17	10 ..	1847 1866
SANDHAMMAREN Two bright fixed lights	55 23. 14 11.5	Iron towers, red, 96 ft. high; in one, N.N.W., 750 ft. apart.....	2a	104	16	1862
UTKLIPPOE ROCKS One fix. & fl. br. lt. $\frac{1}{2}$ m.	55 57.2 15 42.1	Red, open, iron structure, on stone tower, on fortress of S. Rock, S. Karlskrona. Fog-bell	●	110	16	1840
HANÖ Br. fix. lt., red flashes	56 0.5 14 51.	On summit of island, South of Carlskrona. Red flashes every minute	4c	218	14	1869
Carlskrona One fixed bright light	56 10. 14 52.3	Leading light for the harbour in Hanö Bight. Shown between S. $\frac{1}{2}$ E. and S. $\frac{1}{2}$ E. ....	..	..	8	1872
Carlskrona Harbour One br., 1 red leading lt.	.....	Bright light from dockyard; red light from lightvessel. In one, lead in. Gong .....	..	..	..	1870
Utgrunden Lightvessel Two bright fixed lights	56 20.8 16 14.8	At 4 cables S.W. of South Spit, in S. part of Kalmar Sound. Fog-bell	●	26	8	1866
GRIMSKÄR Fixed, flashing, and red light	56 39.2 16 22.4	Tower, 38 ft. high, chequered red and white, on the rock near Kalmar. Light shows as flashing, betw. N.N.E. $\frac{1}{2}$ E. and N.E. $\frac{1}{2}$ N., fix. betw. N.E. $\frac{1}{2}$ N. and N.E. $\frac{1}{2}$ N., flashing betw. N.E. $\frac{1}{2}$ N. and N.E. $\frac{1}{2}$ N., red betw. N.E. $\frac{1}{2}$ N. and N.E. $\frac{1}{2}$ E., and fix. br. betw. N.E. $\frac{1}{2}$ E. and S. To the southward betw. S. and S. by W. $\frac{1}{2}$ W. it shows as a flashing lt., betw. S. by W. $\frac{1}{2}$ W. and S.W. by S. as a fix. lt., and betw. S.W. by S. and S.W. $\frac{1}{2}$ W. as a flashing lt. Gong in fog	4a	46	12	1865 1878
ÖLAND. SOUTH POINT One fixed bright light, and flashing light	56 11.8 16 24.5	White stone tower, 136 ft. high, on point. Lt. shows flashing over Ut Grund, betw. N. 16° W. and N. 9° W., and from N. 4° E. to the land. Pilot-station. Two guns in answer to signals in fog	2a	133	17	1785 1845
Kappel Point One flashing light	56 49.3 16 50.7	Iron tower on E. coast of Öland. Flash every 10 seconds.....	c	..	..	1871
Biörnhabben Rock One fixed bright lt.	57 22. 17 6.5	White tower, 105 ft. high, on rock. Off N.W. point of island	3a	103	12	1843
Lape Point One fix. red & br. lt.	56 44.7 16 30.8	Lt. shows br. betw. S.W. by W. & W.S.W. $\frac{1}{2}$ W., red betw. W.S.W. $\frac{1}{2}$ W. and N. by W. $\frac{1}{2}$ W., and br. betw. N. by W. $\frac{1}{2}$ W. and N.W. by N. Between S.W. by W. and W.S.W. $\frac{1}{2}$ W. a flashing light intended	5a	25	9	1866 1878
Borgholm One bright fixed lt.	56 52.6 16 38.1	On keeper's house.....	5a	36	10	1865
Demman Shoal One revolving light	57 3.6 16 40.8	Shows flash every 40 secs, obscured between E. and E.S.E. Gong in fog	●	43	10	1874
Furö One red or bright light	57 17. 16 38.	From roof of pilot's house, N.E. end of Furö. Lt. shows fix. red betw. N. 45° W. & N. 56° E., leading E. of Ronn Reef and other outlying shoals; red & white flashes betw. N. 56° E. & S. 67° E., leading $\frac{1}{2}$ mile N. of Jungfrau Id.; and fix. white over remainder of arc. Bright lt. vis. 8 or 9 miles, red lt. 5 or 6 miles	● ..	47 ..	8 5	1874
GOTTLAND.						
HÖBORG One rev. br. lt. 2 min.	56 55.3 18 11.1	White tower, 71 ft. high, on S. point of island .....	..	190	16	1846
Faludden One fixed red light	56 59.8 18 25.7	Red lt.-ho., 37 ft. high, on S.E. coast of Gotthland. Two guns in answer to signals in fog. Gong	3a	35	8	1867
Märaholmen One flash. lt., 10 secs.	57 13.3 18 43.2	Round, red, iron tower, with white belt, on the S.E. coast of Gotthland .....	..	70	12	1878

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GOTTLAND—(continued).						
Wisby One red fixed light	57 38.2 18 18.7	On S. end of breakwater. In winter only for mall boats.....	..	..	..	1867
ÖSTERGARN ISLAND One fixed bright lt.	57 26.4 18 59.8	Tower, 66 ft. high. Fog-bell.....	3a	101	14	1817 1849
Westergarn Two fixed lights	57 27.3 18 9.8	For mail steamers; at entrance of harbour. In line, lead in	●	..	10	1860
Utholmen One fixed, flashing, & red light	57 25.9 18 7.3	On a house, on W. part. of Id. Fix. br. lt. to southward and westward, flash. br. lt. betw. N. $\frac{1}{2}$ W. and land, and red fix. lt. betw. S.E. $\frac{1}{2}$ E. and E. $\frac{1}{2}$ S.	●	32	9	1860 1878
Farö One rev. br. lt., 2 m.	57 57.4 19 23.3	White tower, 90 ft. high, on Holm Point, East end of island. Gong.....	●	100	14	1847
HÄRADSKÄR ISLET One br. fix. & flash. lt.	58 8.8 16 59.7	Red iron tower, 96 ft. high, on S.W. end of islet. Fixed light, with flash every $\frac{1}{4}$ min.	1c	117	17	1864
GOTTSKA SANDÖ Two fixed bright lights	58 23.2 19 12.9	Red and white towers, 78 ft. high, on N. part of island. In one, S. 50° E., 260 yds. apart, lead 1 mile W. of Kopparstenarne Shoal ...	3a 3a	136 136	16 ..	1859
Femöre-hufvud One bright fixed light	58 38.9 17 7.	On red house, with white vertical band. Gong	●	..	..	1867
Ledskär One bright fixed light	58 42.2 17 13.8	On red house, with white vertical band.....	●	..	..	1867
Bokö Sund One bright fixed light	58 51.2 17 36.5	On red house, on Oxnö.....	●	..	..	1867
LANDSORT One br. lt., red flash 1 m. Lower green light	58 44.5 17 52.4	Round tower, 85 ft. high, on S. pt. of Id. Lower green lt. shows in fairway channel. Two guns in answer to Fog-signals. Gong	2a	146	18	1660 1870
Mäsknuf One bright fixed light	58 51.4 18 1.4	On rock, in Dalarö Channel	5a	29	9	1868
Sandö One br., 1 red fixed lts.	59 17.5 18 56.	On island, at Sandhamn entrance to Stockholm. Pilot station. Guide between outer shoals	..	..	..	....
KORSÖ One br. lt., with flash	59 17.2 18 57.2	Gray tower, 85 ft. high, on islet hill. Light flashes every $2\frac{1}{2}$ minutes	4c	151	17	1768
GRÖNSKÄR One bright fixed light	59 16.8 19 1.9	Granite tower, 76 ft. high, on the rock; white free from ice	3d	111	15	1786
Kanholmen One fixed light	59 22.2 18 45.	On red house on Stockholm Rocks. Aug. 1 to May 15.....	●	..	..	1867
SVENSKA HOGAR One red and br. rev. lt.	59 26.7 19 30.5	Lt. flashing every $\frac{1}{2}$ min. Red iron tower, 60 ft. high, on summit of island. Bell & Gun	2b	101	14	1874
Svenska-Björn Lt.-Ves. Two bright fixed lights	59 35.5 19 46.6	Off Stockholm Skaren, S. of the Sea of Aland. Fog-bell	●	39	10	1868
SÖDERÅRM One rev. br. lt., 2 min.	59 45.4 19 28.	White tower, 66 ft. high; two red belts; on Tollskär, near old beacon. Pilot station ...	●	99	14	1839
NÄSKUBBEN ROCK One fixed red light	59 52.7 19 5.5	Off Björkö. Shown from N. $\frac{1}{2}$ E. by W. to S. by W.	●	21	9	1850 1869
Simpnäs Klubb One bright fixed light	59 53.7 19 5.1	Off N.E. point of Björkö. Gong	●	45	8	1869
Griessel Hamn	.....	Light occasionally on beach .....	..	..	..	....

Name and Character of Light.	Lat. N. Long. E. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SVARTKLUBB ROCK One rev. br. lt., $\frac{2}{3}$ min.	60 10.3 18 50.	In the South Quarken. White tower, 54 ft. high, with two red belts, on the rock. Bell	●	68	13	1819 1842
UNDERSTEN ROCK One fixed bright light	60 16.6 18 55.6	In the South Quarken. Tower, with two red bands, 35 ft. high, on the rock. Lt. shown betw. W.S.W. and N.N.W. $\frac{1}{2}$ W. A black double cone is shown when Finngrund Lt.-ves., and a red globe when Grundkalle Lt.-ves., is not in her station	●	78	12	1848
DJUNSTEN One fixed bright light	60 22.2 18 24.5	White tower, 52 ft. high, on W. pt. of Gräsö Island, in Öre Grund Bay. Shows a red sector in a N. and N.W. direction	●	65	12	1830
Öregrund Bay Lt.-ves. One bright light	60 27.5 18 17.	In North part of Öregrund Bay, Gulf of Bothnia. Gong and Bell	●	22	8	1873
ÖRSKÄR ISLAND One rev. br. lt., 2 min.	60 31.5 18 22.2	Tower, 110 ft. high, white, with two red bands	●	118	16	1739 1852
Grundkalle Shoal Lt.-Ves. Two fixed bright lights	60 30. 18 55.	North end of shoal. Two red balls. Bell in fogs. When not in her station, a red globe is shown at Understen lighthouse	●	40	10	1864
GULF OF BOTHNIA.						
Eggegrund One bright fixed light	60 43.8 17 33.1	On roof of a house, on West end of islet. Gong	●	62	9	1838
Skutkars Harbour One red fixed light	60 39.3 17 24.6	Small wooden tower on main island	..	..	4	1871
Biörn Rock Two fixed bright lights	60 37.7 17 59.5	One on tower, the other on keeper's-house. In one, N.W., 117 ft. apart. Two Signal-guns in answer to Fog-signals	●	42	11	1859
Bönan One fixed bright light	60 44.4 17 19.6	Near Custom-house	●	62	6	1840
Östra Finngrund Lt.-Ves. One fixed bright light	61 1.5 18 31.	Two miles N.E. of North shoal. Two masts, one ball. Fog-bell. When not in her station, a black double cone is shown at Understen lighthouse	●	37	10	1859
STOR JUNGFRUN One fixed bright light	61 10.1 17 21.	Tower, 56 ft. high. Two red belts. On East side of island. Pilots	3a	86	14	1838 1853
Söderhamn Two fixed red lights	.....	E.S.E. and W.N.W., 292 yds. apart. Outer lt. elevated 20 feet on S. pt. of Skuggskär. Leading lts. for Söderhamn Harbour. Vis. only through small arc, and shown from Aug. 1 until port is closed by ice	●	20 38	.. ..	1876
Agö One br. rev. lt., 20 secs.	61 32.8 17 28.7	On East point of island, off Hudiksvall.	●	95	12	1860
BRÄMÖ One fixed bright light	62 13.1 17 45.5	Yellow tower, 50 ft. high, on N.E. point of island	2a	101	17	1859
Sundswall Harbour One fix. and flashing lt. Temporary white lt.-house building	62 20.2 17 28.5	On Dräghall Rock. Flash betw. S.E. by S. & S.E. $\frac{1}{2}$ E. fix. betw. S.E. $\frac{1}{2}$ E. and S.E. by E. $\frac{1}{2}$ E., flash betw. S.E. by E. $\frac{1}{2}$ E. and E. by S. $\frac{1}{2}$ S., and fix. in Sundswall Channel	..	..	..	1878
Lungö One fixed and flash. lt.	62 38.3 18 6.	Yellow tower, 31 feet high, on East point of island. Flash every 3 minutes	4a	78	12	1861
Skags Harbour One br. rev. lt., 1 min.	63 11.8 19 2.7	Tower, chequered red and white, on Gräklubb Island. Lt. not visible to eastward of N....	..	71	12	1871
Sydöst Botten Grund Lightvessel One bright fixed light	63 19. 20 9.	$\frac{2}{3}$ miles from S. edge. Two masts. Fog-bell	●	10	..	1862
SKALSKÄR One rev. br. and red lt.	60 24.7 19 34.	Bright and red flash alternately every 30 secs.	2b	..	..	1868
HOLMO GADD One fixed bright light	63 35.8 20 46.6	Tower, 68 ft. high, on Holmön, S. Gadd Rocks. Strong light to N.N.W. $\frac{1}{2}$ W. Two guns in answer to Fog-signals	●	70	12	1828
Bredskär Island Two fixed bright lights	63 39.6 20 20.3	Leading lts., to mark Bredskär Sound, Umea Channel. Shown betw. Aug. 10 and Nov. 10	..	..	3	1877
UMEA One rev. br. lt., 2 min.	63 48.6 21 1.2	In the North Quarken; on Fjäderåggä Great Rock	●	101	16	1861

Name and Character of Light.	Lat. N. Long. E. o ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Batan Leading lights	64 o. 20 55.	Inner light red, elevated 30 ft.; outer white, elevated 18 ft. In line, lead clear of shoal at South entrance. Fog-bell .....	..	..	5	1874
BJURO KLUBB One fixed bright light	64 29.3 21 35.4	Stone tower, 25 ft. high, on the head. Gong	2a	171	18	1859
Haparanda One fixed bright light	65 31.7 23 36.5	Red tower, 60 ft. high, on Malören Rock. Pilot station.....	●	78	10	1851
Bödkallen Rock One br. rev. lt., 1 min.	65 19.3 22 22.2	Open iron tower, painted red, 72 ft. high, on the rock	●	84	12	1873
Torneå	65 48.5 24 12.	Light proposed .....	..	..	..	....
Uleaberg One br. fix. & flash. lt.	65 2.5 24 34.	White round tower, on Maria Point, W. end of Karlö. Shown from S.S.W. $\frac{1}{2}$ W. by the W. to S.E. $\frac{1}{2}$ E. Bright flash every 40 secs. Signal station for pilots	4c	110	15	1872
ULKO KALLA One fixed bright light	64 20. 23 29.	Dark red round tower, Gulf of Bothnia	4a	58	13	1872
Vargö Gadder	.....	Light proposed .....	..	..	..	....
Quarken Lightvessel One fixed red light	63 26.7 20 45.8	On the N.W. end of bank, in North Quarken. Fog-bell	●	20	7	1868
Quarken One rev. br. lt., 1 min.	63 14.1 20 37.7	Brick tower, 62 ft. high, on Norr-Skaren, W. islet, S. entrance of N. Quarken. Pilots. Bell	●	103	12	1848
Gaddarne One bright fixed light	62 58. 20 42.	.....	..	..	..	....
Kaskö One fix. & flashing red light, $\frac{1}{2}$ min.	62 20. 21 11.	White tower, 86 ft. high, surrounded by red wall, on Skäl Grund Island.....	3c	103	16	1875
Björneborg Flashing lt. every min.	61 28.6 21 22.5	On North side of Skbb Skär Island.....	4b	117	16	1873
NYSTAD One fixed bright light	60 43.2 21 1.	Tower, 120 ft. high, on Eneskär Island, 9 miles N.W. of Loperton. Pilot Station. Shown westward from N.W. by W. to S.W. by W. Fog-bell	●	152	14	1833
SKÅLSKÄR, SOUTH One revolving lt., $\frac{1}{4}$ min.	60 24.8 19 34.	Stone tower, 120 ft. high, on S. rock, entrance to N. Quarken. Flashes bright and red alternately	2b	149	18	1868
Eckerö One bright fixed light	60 13.3 19 31.3	At the head of inlet .....	..	20	5	1861
LÄGSKÄR One fixed bright light	59 50.8 19 55.1	Red tower, 89 ft. high, on N. point. Shown northward, from N.E. $\frac{1}{2}$ E. to S.S.E. Bell....	●	101	14	1859
Helman Island One bright fixed light	60 12. 19 17.	On one of the Åland Islands. Aug. 1 to May 1. Shown from S.E. by E. $\frac{1}{2}$ E. to E.S.E., and from S.W. to N.W. by W. $\frac{1}{2}$ W.	●	23	8	1868
OUTÖ, or UTÖ One fixed bright light	59 46.5 21 22.2	Tower, 93 ft. high, red and white squares, on middle of island. Pilot station.	●	130	13	1866
HANGÖ One fix. lt., with flash, 2 min.	59 46. 22 58.1	Tower, 86 ft. high, on S.E. point of Russari Island, 3 miles S. $\frac{1}{2}$ W. of head. May 18 to July 13. Pilots Fog-bell	3b	112	15	1863
Hangö Head Road 1. One br. or red fix. lt. 2. One green, one br. lt.	59 48.2 22 57.7	1. On N. end of Gustafsvard Island. Red to entrance from S.S.E. $\frac{1}{2}$ E. to N.N.W. $\frac{1}{2}$ W., bright to anchorage	a	40	10	1869
		2. On mole constructing. Green lt. on mole-head, and bright lt. at North end of mole				
RENSKÄR One fixed bright light	59 56.2 24 24.7	Granite tower, 112 ft. high, 1 $\frac{1}{2}$ mile S. $\frac{1}{2}$ W. of Porkala Point. Shown from S.W. by W. to E. by S.....	●	172	15	1800

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SÖDER SKÄR One fixed and flash. lt.	60 6.7 25 25.9	Brick tower, 99 ft. high. Bright flash every 1½ min. Shown from N.W. ¼ N. to N.E. ¼ E. Pilot station.....	3a	124	16	1862
Kalbaden-grund Lt.-Ves. One fixed bright light	59 58.8 25 37.5	In 13 fathoms, on S. side of shoal. Ball at mast-head. Fog-horn, 3 secs. ev. 10 min.	●	40	10	1858
STYES UDD One fixed bright light	60 10.5 29 2.	North side of entrance to St. Petersburg Bay	3a	117	12	1873
Sestretetsk Harbour lights	60 7.0 29 56.5	A red lt. on E. side, and blue lt. on W. side of entr. to harb. A br. lt. at each angle of the outer or W. side of harb., and on wharf.....	..	..	..	....
Neva Lightvessel One fixed bright light	59 55.4 30 8.9	Entrance of Korabey ship channel to St. Petersburg. From August till ice.....	●	57	6	1858
Yelaguin Lightvessel One fixed bright light	59 58.3 30 9.6	Entrance of North channel to St. Petersburg. From August till closed. Fog-bell.....	..	16	5	....
Peterhof Two fixed bright lights	59 53.4 29 54.9	Two pillars on end of pier. From August till close of navigation. Fog-bell.....	..	26 19	6 5	1857
Oranienbaum One fixed bright light	59 55.7 29 46.6	On staff, on West pier. August till close. Fog-bell.....	..	45	6	....
Frederikstadt One fixed br. or blue lt.	59 58.2 29 47.2	Iron tower, 32 ft. high, on angle of Kronstadt Harbour. The lt. is blue from S.W. by W. ¼ W. to N.W., by S. and E.; the rest bright. Fog-bell	6a	38	6	....
KRONSTADT Merchant's Gate Two fix. bright lts. Friderikstadt One bright or blue lt. One fix. red, and one bright light Two fixed bright lts. Two fixed bright lts.	59 58.9 29 45.4	One on each mole-head	4a	20 21 39 .. 55 25 15	5 .. 8 10 8 4	.... 1828 1865 1863 1866
TOLBOUKIN One rev. br. lt., 1 min.	60 2.6 29 32.7	White tower, 85 ft. high, on an islet, West of Kronstadt Island	3b	95	11	1832
London Shoals Lt.-Ves. Three bright fixed lights	60 0.1 29 31.4	Set triangularly. May 28 to July 13. Fog-bell	●	23 17	7 6	1858
Narva One fixed bright light	59 28.1 28 3.5	White tower, 67 ft. high, at South point of entrance to river. May 28 to July 13. Pilot and Semaphore Station. Fog-bell	2a	63	12	1808
SESKÄR One br. rev. lt., ¼ min.	60 2.1 28 23.	Iron tower, 89 ft. high, on N.W. point of island. Fog-bell ev. ¼ hour	2d	97	14	1807 1858
NERVA ISLAND One fixed bright light	60 14.7 27 58.6	White iron tower, 92 ft. high; entrance to Viborg Bay. Fog-bell.....	2a	118	16	1867
SOMMARS One rev. br. lt., 1 min.	60 12.5 27 39.8	On West hill of island. May 28 to July 13. Fog-bell	3b	85	10	1808
HOGLAND, N. POINT Two fixed bright lts. South point of island One fixed red light	60 5.7 26 58.4	Two lts. on N. point. In one, S. by W. ¼ W., 1,250 yds. apart. High light hidden between S. by E. and S.E. ¼ S. Low lt. hidden from S.W. ¼ W. to S.E. ¼ S. Fog-bell. Pilot-station	1a 4a	388 29	23 7	1861
Bäskär One rev. br. lt., 1 min.	59 58.1 26 41.1	On South point. Lifeboat station. Fog-bell	3a	51	8	1861
		Black building, 52 ft. high, on island. Fog-bell. May 28 to July 13	●	74	9	1813

Name and Character of Light.	Lat. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Stenskäär	59 49.2 26 23.1	Bright fixed light	3a	..	..	....
EKHOLM One revol. light, $\frac{1}{2}$ min.	59 41.1 25 49.	Red stone tower, 76 ft. high, on N. point of island. May 28 to July 13	2b	106	14	1861
KOKSKÄR One fixed bright light	59 41.7 25 1.5	Dark tower, 92 ft. high, on the rock. May 28 to July 13. Fog-bell	2a	106	15	1858
REVEL, or Katerindal.						
Naval Port Two red lts. to S., and two br. lts. to N.	.....	Bright lt. at E. Pass, end of mole; red lt. at S. Pass; bright lt. at W. Pass, end of mole; all on the wall	●	..	3	1859
			..	..	3	....
			..	..	3	....
			..	..	3	....
Mount Lagsberg Two fixed bright lts.	59 26.3 24 49.2	One near marine barracks; the other behind Katerindal. In one, S. by E., 1,167 yds. apart, lead to Revel Road. N. lt. only shows from N. $\frac{1}{2}$ W. to N. by W. $\frac{1}{2}$ W. in fairway; S. lt. shows from N. 15° W. to N. 49° W. over the bay. May 28 to July 13	3a	161	15	1806
			●	268	19	1836
Revelstein Lightvessel Two fixed bright lights	59 43.3 24 44.	In 30 fms., on N. side. May 28 to Nov. 13. Yellow flag. Fog Whistle. Keep to northward	●	32	6	1858
			..	40	..	....
MARGEN One rev. br. lt., 1 min.	59 36.4 24 31.9	Gray tower, 124 feet high, on N. part of island. Shown from S.W. by W. to E. by S. May 28 to July 13	●	126	13	1828
SOUEOP Two fixed bright lights	59 27.9 24 24.1	White tower, 61 ft. high, on N. cliff of cape. Lt. shows from E.S.E. to W. by S. $\frac{1}{2}$ S. N. light-tower, 35 ft. high, at $\frac{1}{2}$ mile E. of old tower. Light shows over channel from W. by S. to W. by S. $\frac{1}{2}$ S. In one, E. by N. $\frac{1}{2}$ N., they lead in	●	135	13	1788
			4a	28	10	1869
PAKER ÖRT One fixed bright light	59 23.3 24 3.4	Stone tower, 66 ft. high, on cape. Shown from W. by S. to N. by E. May 28 to July 13. Fog-bell	●	147	14	1808
FORT BALTIC One fixed green light One fixed red light	.....	Green lt. on W. side of harbour, red lt. on E. side of harbour, 72 ft. apart. Shown betw. Oct. 1 and April 1 .....	..	17	2 $\frac{1}{2}$	1877
			:	17	2 $\frac{1}{2}$	
ODENSHOLM One flashing bright lt.	59 18.3 23 23.	Stone tower on N.W. pt. of island, painted in black and white horizontal bands. Lt. shows 6 sec. & 4 sec. flashes altern., with eclipses of 3 secs. Masked over Stapelboten Grund S. of S.W. $\frac{1}{2}$ W.	2b	115	16	1876
Wormsö One fixed light	59 1.8 23 8.3	White iron tower, 79 ft. high, on W. end of Id. Lt. shows white, from N.E. $\frac{1}{2}$ E. to N.N.W. $\frac{1}{2}$ W.; red, to mark the entr. of Wormsö Sound, betw. N.N.W. $\frac{1}{2}$ W. & N.W. $\frac{1}{2}$ N.; & white from N.W. $\frac{1}{2}$ N. to S.E. by E.	3a	67	14	1864
Werder Island One fixed light	58 33.9 23 31.3	Brown iron tower, 93 ft. high, on W. part of island in Mönsund. Lt. bright in channel, from S. $\frac{1}{2}$ E. to S.S.W. $\frac{1}{2}$ W.; thence red over shoals to W. to N.W. by N.	3a	94	11	1866
TAKHONA POINT One bright fixed light	59 5.4 22 36.	Iron tower, painted white. Lt. shown betw. E. $\frac{1}{2}$ S. & W. $\frac{1}{2}$ N., being masked over Nekman Grund on the W., and Anker Grund on the E.	1a	140	18	1876
DAGER ÖRT One fix. & flash. lt. 1 m.	58 55. 22 15.2	White tower, 110 ft. high, on a hill, 5 miles inland of W. point of Dagö Island. May 28 to July 13.	1d	328	21	1860
North Ristna Point One fixed red light	58 56.3 22 4.2	White iron lighthouse, 98 ft. high, on W. extreme of Dagerort. Fog-bell	4a	118	17	1876

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GULF OF RIGA.						
Kinö One br. rev. lt. $\frac{1}{2}$ min.	58 5.8 23 59.6	White iron tower, 93 ft. high, on S. part of island.....	3b	93	11	1865
Pernau Two fixed lights	58 23.2 24 30.8	Two lanterns, near S. entrance. Sept. 1 till ice .....	..	..	..	1856
Riga 1. Upper br. rev. lt., $\frac{1}{2}$ min. 2. Lower red fixed lt. 3. One fixed green lt.	57 3.5 24 1.3	1. and 2. In same iron tower, 99 ft. high, on Fort Kamet Dyke, W. side Dvina entrance. Red lt. from W. by N. $\frac{1}{2}$ N. to N. by E., over best anchorage in river entrance. Pilot station	2b 4a 6a	103 21 25	16 9 8	1818 1863 1863
Messaragetsem Point One rev. red & br. lt.	57 21.7 23 8.3	Iron tower painted white. Lt. bright and red alternately for $\frac{1}{2}$ minute	4b	69	13	1875
RUNÖ One fixed bright light	57 48.1 23 15.5	Yellow building, 102 ft. high, on Hochberg, S.E. of island. May 28 to July 13	•	200	16	1860
DOMES NESS One fixed bright light	57 48.2 22 39.3	Lts. from stone towers on the Ness S.S.W. $\frac{1}{2}$ W. 106 yds. apart discontinued, and temporary lt. shown on extreme of reef. Semaphore telegraph-station. Lifeboat .....	..	..	..	....
FILSAND ISLAND One fixed bright light	58 23. 21 49.9	Stone tower, 115 ft. high, on W. point. Shown westward from N. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E. Lifeboat station	1a	136	13	1824 1860
Cape Karal <i>Proposed</i>	58 18.1 21 51.7	Red light proposed	1a	..	..	....
SWALFER ÖRT One rev. br. lt. $\frac{1}{2}$ min.	57 54.6 22 4.2	White tower, 114 ft. high, on S. point of Ösel Island Lifeboat.....	•	114	12	1838 1860
Skliitter <i>Proposed</i>	.....	Light proposed	4a	..	..	....
LYSER ÖRT One fixed bright light	57 34.1 21 43.9	White tower, 109 ft., 1,100 yds. in-shore of cape. Lt. is red (or black ball), with compact ice. Shown northward from E. by N. to S.S.W. $\frac{1}{2}$ W.....	2a	127	13	1845 1863
Windau Two fixed lights	57 23.8 21 32.4	One green, one red light, on jetties .....	..	..	2	1870
LIBAU 1. One br. fix. & flash. lt. 2. One red fixed light	56 31. 20 59.7	1. Red iron tower, 95 ft. high, at entrance of harbour. Flash of 5 secs. ev. min. Reported as flash of 10 secs. once in 2 minutes	3c	103	15	1868
		2. On S. jetty. Shown from W.S.W. to N.N.E.	4a	26	8	1869
PRUSSIA (NORTH GERMANY).						
MEMEL One fixed bright light	55 43.7 21 6.2	Round tower, 70 feet high, on N.E. side of entrance. Shown from N.W. to S.W. Lifeboat station. Aug. 1 to May 15 .....	..	96	20	1818
NIDDEN One br. flashing lt. 10 s.	55 18.3 21 6.3	Tower, 75 feet high, on Urbe Calis Hill, near village, on Kurisch Nehrung.....	1b	223	22	1874
BRÜSTER ÖRT One fix. lt., flash 4 min.	54 57.7 19 59.2	Red tower, 75 feet high, on the cape. Shown all round, except between S.W. and S.S.E.	2c	143	20	1841
Pillau One fixed bright light	54 38.3 19 54.2	Round tower, 88 ft. high, S.E. of town. Aug. 1st to May 15th .....	..	92	20	1841
Frische Haff Königsberg	54 41.3 20 22.5	Two fixed lts. Shown from red beacons on N. side of channel; in one, show direction of channel .....	..	18	10	1808
Frauenberg	54 21.5 19 40.8	Red harbour light .....	..	..	..	....
DANZIG One br., one red fix. lt.	52 24.3 18 40.2	Bright lt. on Neufahrwasser Tower, 63 ft. high. Red lt. on end of E. mole. In one, N. and S., 1,647 yds. apart. Steam Fog-trumpet.....	..	78 43	14 6	1841 1833
OXHOFF POINT One flashing light	54 33. 18 34.	Flash every 3 secs. Lt.-ho. N.E. $\frac{1}{2}$ E., 580 yds. from Oxhoff Church. Lt. obscured on some bearings by Hela Peninsula .....	..	162	13	1877

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
HELA One rev. br. lt., $\frac{1}{2}$ min.	54 36.1 18 49.2	Round tower, 108 ft. high, at 4 cables N.E. $\frac{1}{2}$ N. from point. Shown east. ard from N. by W. $\frac{1}{2}$ W. to S.S.E.	..	120	16	1840
Heisterneest One fix. & flash. br. lt.	54 39. 18 47.3	On the Hela Peninsula, Gulf of Danzig. Lt. shows br. flash of 10 secs., preceded and followed by eclipse of 10 secs. once in ev. 2 min. Vis. betw. S. by W. $\frac{1}{2}$ W. and W. by N. $\frac{1}{2}$ N.	..	120	8	1872 1877
RIKHOFT Two fixed bright lights	54 50. 18 20.7	New tower (1875) W.N.W., 208 yds. from old tower 70 ft. high. Lts. vis. seaward from W.N.W. to S.E. Fog-trumpet, 5 secs. ev. min.	1a 1a	226 231	22 21	1866 1875
SCHOLPIN One fixed bright light	54 43.2 17 14.8	Light-tower, 66 ft. high, on hill, $\frac{1}{2}$ mile from shore	1a	248	22	1875
Stolpemünde One red fixed light	.....	On the Pilot's watch-house. Bearing S.S.E. leads to entrance.	..	39	6	1872
JERSHOFT One rev. br. lt., 2 min.	54 32.7 16 33.	Stone building, red, 93 feet high, near village. Shown northward from E.N.E. to W.S.W.	..	160	18	1838
FUNKENHAGEN One fixed bright light	54 14.7 15 52.1	Lt.-ho., 147 feet high, close to shore, and 11 miles eastward of Colberg light	2a	164	19	1877
Colbergmünde One fixed bright light	54 11.2 15 34.	On extremity of East mole.	..	25	8	1866
GROSS HORST One rev. lt., 20 secs.	54 5.8 15 4.9	Brick tower, striped red and black, 131 ft. high	1b	200	20	1861
SWINEMÜNDE 1. One fixed bright lt. 2. One fixed red light	53 55. 14 17.6	1. Port of Stettin. Yellow brick tower, 200 ft. high, on E. side of harbour; br. lt. shown northwards from E. by N. to N.N.W. 2. From red tower on E. mole-head, $\frac{1}{4}$ mile N. of yellow tower. Fog-bell	1a ..	211 42	21 10	1855 1857
Grosse Haß	.....	Lt.-vessels are placed at the Kriehaken Bank, in Schwantewitzshaken Bay, and near Woiwig Bank	..	..	..	....
Uckermünde	..	Fixed light on West mole	..	26	..	....
GREIFSWALDER ÖIE One revolving lt., 3 m.	54 14.7 13 55.4	Red tower, 120 ft. high, on N.E. part of island. Flashes red and white alternately	..	154	17	1840
Palmerort Lightvessel One fixed bright light	54 12.4 13 25.	In the Baggerinne Channel; yacht-rigged. Pass to northward. Fog-bell	..	36	10	1868
ARKONA One fixed bright light	54 41. 13 26.2	Red tower, 62 ft. high, on Wittow Peninsula. Shown northward from S.W. by W. $\frac{1}{2}$ W. to S.S.E. $\frac{1}{2}$ E.; thence red to westward in Tromper Bay. Fog-trumpet near lt.-ho., blast of 5 or 6 secs. once every minute	..	200	22	1828 1851
DARS POINT One rev. br. lt., 1 min. Lower fixed bright lt.	54 28.9 12 31.	In one tower, red, 100 ft. high. Shown from S.W. by S. to E. $\frac{1}{2}$ N. Lower light shown only in channel, between Darsor Ort and Giedser Odde.	2b ..	108 41	16 12	1848
Warnemünde 1. One fixed bright lt. 2. Two green, 2 red lts.	54 10.5 12 5.7	1. On W. side of entr. Shown from W.N.W. to N.E. $\frac{1}{2}$ E. Aug. 1 to April 30. (Tide signals) 2. Two green lts. are shown, one on each pier-head at entr. of harbour, and 2 red lts. in one lead in	.. ..	58 42	12 10	1836 1877
BUCH POINT One flash. lt., red or br.	54 7.9 11 41.7	Lt.-ho., 68 ft. high, red and white bands, 13 cables S. of Buch Point. Lt. shows br. flash of 6 secs. ev. 15 secs., except betw. W. $\frac{1}{2}$ S. & S.W. $\frac{1}{2}$ W., where it is flash. red over shoals	2c ..	312 ..	17 14	1878
Timmendorf One bright fixed light	54 0. 11 23.	White tower at Pilot station, on N.W. end of Poel Island, Wismar Bay	5a	60	12	1872
Travemünde 1. One fix. br., 1 red lt. 2. Two red lights 3. Two green lights	53 57.6 10 52.9	1. Round tower, 113 ft. high, on N. point of river, 1 mile below Travemünde. Lights vertical. Upper lt. shown only in channel, between E. by N. and N.E. by E. Lower red lt. shown when pilots can go out 2. On S. mole and Privall Peninsula. In line, lead in mid-channel 3. One on jetty; the other between 2 houses	.. .. .. .. ..	100 68 38 20 36	16 6 3 3 3	1827
BORNHOLM Christiansöer Ertholms One rev. br. lt., 20 s.	55 19.3 15 11.6	On round tower of fortress	●	94	14	1805
Cape (Sweden) Building	.....	Lighthouse building. Lifeboat station.	5a	..	..	....
HAMMAR POINT One fixed bright lt.	55 17.1 14 46.8	On Stellebjerg, near N. point of island	●	279	14	1802
Bönne 1. One red fixed light 2. One green fixed lt.	55 5.7 14 42.0	1. Red lt. on shore, near church 2. Green lt. on W. pier-head. In one, E.N.E., they lead in	.. ..	52 29	8 ..	1848

Name and Character of Light.	Lat. N. Long. E. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SKAGEN or SCAW One fixed bright light	57 44.1 10 37.9	Red brick tower, 126 ft. high, $\frac{1}{2}$ of a mile from extreme. Lt. brightest from W. by S. to S.W. by S. Ice Signals shown. Signals shown on old lt.-ho., if Kattegat lt.-vessels not there Off Skaw Point Reef, in 20 fms. To show red rev. lt. ev. 20 secs., and carry Fog-trumpet	1a	144	15	1561 1858
<i>Lightvessel proposed</i>						
HIRTSHALS One fixed and flash lt.	57 35. 9 56.6	Red brick tower, 88 ft. high. Brighter flash every 4 min. Lifeboat and rocket-station. Fog-trumpet to be established	1c	187	21	1863
HANTSHOLM One rev. br. lt., $\frac{1}{2}$ min.	57 6.8 8 36.3	Octagonal tower, 60 ft. high, on N.W. point of Jutland	2b	218	18	1843
Thisted	.....	In Lilm Fiord, red pier light	●	17	2	....
Thybo-røn Channel Lt.-V. One bright fixed light	56 42.7 8 15.5	Pilot and lightship at entrance to Lilm Fiord.	●	30	10	1868
Nøvbjerg Head One fixed bright light	56 31. 8 7.	Red brick tower, 67 ft. high, 12 miles S. of Thybo Røn Channel	1a	202	20	1878
HORNS REEF LT.-VES. One rev. br. lt. ev. $\frac{1}{2}$ m.	55 34.1 7 19.5	Lt.-ves. red, with white cross and red ball at fore-mast head, in 18 fms. water, at outer extr. of reefs. Fog-trumpet, 3 blasts once every 2 minutes	..	..	..	1873
Graa Deep Two bright fixed lights	55 30. 8 24.5	On the Seding Strand, as leading lts. for the Graa Deep. In one, bearing E. by N. $\frac{1}{2}$ E. lead in. Show over an arc of 180°	..	78 41	14 11	1873
Esbjerg Harbour	.....	Two leading lts. on the jetties in one S.E. $\frac{1}{2}$ S. Red lt. on N. mole head	..	..	..	1873
SYLT Two fixed lights	55 3.1 8 24.3	Iron towers, 27 & 30 ft. E. lt. br., W. lt. red-dish, on N. end of id. In one, S.E. by E. $\frac{1}{2}$ E., 2,910 yds. apart, lead over the bar	4a	63 72	10 13	1852
RODE KLIF One fix. & fl. lt. ev. 4 m.	54 56.3 8 20.5	Round brick tower, 106 ft. high, near Brøn Hill and village of Kamp. Light changes to red when over the bar	1c	205	20	1856
Munkmarsch Two fixed bright lts.	54 55.2 8 21.8	South of landing-pier. In line lead through new channel	..	..	6	1876.
Hoyer Two fixed bright lts.	54 57.5 8 41.2	Leading lts. for channel from Hoyer Deep to Hoyer Watergate	..	..	6 8	........
Dagebüll Two bright fixed lights	54 43.7 8 41.3	Leading lights shown from landing-pier E.S.E. and W.N.W., 87 yds. apart. They appear red to northward	●	19 24	8 ..	1845 1878
Föhr Island Two bright fixed lights	54 41.5 8 34.3	At Wyk, on S.E. side of island. Lantern lts. in one show entrance. Lifeboat station	..	19 15	4 ..	1842
AMRUM ISLAND One revolving light	54 38. 8 21.5	Dark brown tower, 137 ft. high. Three flashes of 6 secs. every minute	1b	207	21	1876
Amrum Harbour One fixed bright lt.	.....	From lamp-posts, E.S.E., 1,968 yds. from principal lt., in line with which it leads into the harbour	..	26	7	....
ELDER LIGHTVESSEL One bright fixed lt.	54 15.8 8 17.5	In 7 fms., westward of mouth of Elder River. Fog-trumpet, 5 secs. in ev. min. Signal-gun	6a	35	10	1806 1868
Elder Pilot Lightvessel One bright fixed lt.	54 15.5 8 34.6	Inner vessel, inside the bar, in 2 fathoms. Bell	●	34	10	1816 1870
Vollerwick	.....	Two fix. lts. to lead in channel to westward, and a similar pair of lts. to lead in channel to southward	..	..	..	1861
Tönning	.....	Two fixed lights. (There are 11 lights in all, between the entrance and Tönning)	..	..	..	1861
RIVER ELBE.						
I. Outer Lightvessel One rev. br. lt., 20 s.	54 o. 8 18.5	In 11 fathoms. Three masts; red flag at main. Fog-bell. Warning-gun and blue lights	6a	38	12	1816
Loots Galliot Lt.-Ves. One fixed bright lt.	.....	Pilot-vessel, in 12 fathoms, $\frac{1}{2}$ mile E.S.E. from outer vessel. Vane at main	..	..	..	....
II. Middle Lt.-V. (Neptun) Two fix. lts., vertical	53 59.2 8 25.2	In 12 fms., on N. side of Norder Gat, $\frac{3}{4}$ miles from pilot-vessel. Three masts; blue and white flag at main	..	38 22	7 6	1828
III. Inner Lt.-Ves. (Jacob Hinrich) One fixed bright lt.	53 57.2 8 32.2	In 9 fms., on S. side of Norder Gat, S.E. $\frac{1}{2}$ E. from No. II. Three masts; red flag, with white square, at main	..	36	7	1854
NEUWERK Two fixed bright lts. Lower fixed light	53 55. 8 29.7	High light-tower, 135 feet high; lower part brick, upper part black. Low light-tower, black, 60 feet high. In one, S. by E. $\frac{1}{2}$ E., 685 yds. apart. Lower lt. from low lt.-ho., between buoys No. 3 and J	● ●	110 50	15 12	1814 1815

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RIVER ELBE—(continued).						
IV. Elbe Lt.-V. (Ernst) One fixed bright lt.	53 55.7 8 40.3	Moored in 10 fms., in mid-channel, 2 miles northward of the Ball Beacon below Cuxhaven, for the winter months, S.E. by E. from No. III lightvessel .....	..	..	..	....
Kugel Saaks One fixed bright lt.	53 53.5 8 41.7	Shows inside the beacon, from N.W. $\frac{1}{2}$ N. to N.W., from black buoys J to L	4a	40	10	1853
Cuxhaven One fixed & flash lt., flash every minute	53 52.5 8 43.	Brick tower, 66 ft. high, W. side of entrance. When it appears in entering, steer for it. It is a fixed lt. up the river. Red lt. on West pier; white in entrance	●	80	12	1802 1861
Altenbruch One bright fixed lt.	53 50.4 8 46.1	Illuminates the lower channel as far as Cuxhaven, and the upper channels as far as black buoy O	4a	44	8	1873
Brunsbüttel One fixed bright lt.	53 53.5 9 6.	The tower is $\frac{1}{2}$ mile W. of harb. entrance. Lt. illuminates whole breadth of chan. upwards, and lower chan. as far as white buoy No. 17	4a	43	8	1873
Bösch One fixed bright lt.	53 53.7 9 15.	On E. side, when river is free from ice. Pilot station	6a	16	4	1820
Stör One fixed red light	53 50. 9 24.1	On N. pier, at entrance of River Stör	●	20	5	1805
Gluckstadt One fixed light	53 47. 9 24.5	White iron tower on N. pier. Lt. red between S.W. by W. and W. by S. $\frac{1}{2}$ S.	6a	16	6	1846 1872
Kraut Sand Light-Ves. One fixed bright lt.	53 43.4 9 27.8	N.W.-ward from Schwarz-tonnen Sand. Pass to North of her	●	40	5	1855
Pagensand One fixed bright lt.	53 42. 9 30.	On the N. side of the Sand the light shows between the white buoys Nos. 11 and 14.	6a	32	5	1873
Esch One bright fixed lt.	.....	On the Schlieburg, and with Pagensand lt., serves as leading mark	4a	51	8	1873
Juel One fixed bright lt.	53 37. 9 33.	White tower on the N.W. spit of the Juel Sand	5a	31	6	1873
Grauerort Lightvessel One fixed bright lt.	53 38. 9 31.	Near Butzfluth Sand. One black ball. Pass to northward. Gong in fogs	6a	40	5	1868
Luhe One fixed bright lt.	53 34. 9 37.7	Turret on W. side of entrance to Luhe Creek. Pass to southward	6a	40	5	1868
Schulau Lightvessel One fixed bright lt.	53 33.1 9 39.4	Near N.W. end of Hauskalb Sand. One black ball. Gong in fogs. Pass to northward ...	●	40	5	1865
Schulau One fixed bright lt.	53 34.1 9 40.	Near entrance. Visible when lightvessel is passed. A lower red light shown between white buoy No. 2 and black buoy No. 8.	6a	42	5	1855
Finkenwärder One fixed red light	53 32.3 9 53.2	On a beacon. Illuminating up stream to Muhlenfluth Sand .....	..	..	..	1874
Hamburg One fix. red & green lt.	.....	W. corner of Sandthor Quay; red over Oster Gatt, green towards Sandthor Harbour .....	..	..	..	....
HELGOLAND One fixed bright light One fixed red light	54 10.8 7 53.1	(British.) A circular white tower, 60 ft. high, on W. side of summit. Proposed to be altered to rev. lt. Sound-rocket ev. 10 min. in fogs .....	..	221	20	1811
WESER RIVER LT.-V. Three bright fixed lts.	53 54. 7 49.	On separate masts, each at 39 ft. Each mast has a cage, at 74, 77, and 83 ft. A riding lt. at forestay. Fog Bell 5 times every 2 min.	6a	39	8	1874
Inner Lightvessel One fixed bright lt.	53 49. 8 7.2	At entrance, in 9 fms. Two masts and ball at the fore. Gun and Bell in fogs. Pilots .....	..	36	5	1818
HOHE WEG FLAT One fixed bright lt. Lower fix. br. or red lt.	53 42.8 8 14.9	In one brick tower, 100 ft. high. Upper lt. vis. all round, except over Hook Siel Flat (Jade River), betw. S.W. $\frac{1}{2}$ W. & W. $\frac{1}{2}$ S. Lower lt. vis. from N. by W. $\frac{1}{2}$ W. to E. by S.; it also shows red to the Dwasgatt	2a	112	15	1856 1857
Langlutjen Fort One fixed bright lt.	53 34.7 8 29.7	On landing-pier of fort, on East side of Langlutjen Sand .....	..	..	..	....
Brinkamahoff One fixed bright lt.	53 34.3 8 32.8	On landing-pier of fort, now building .....	..	..	..	....
Bramerhaven One bright fixed lt.	53 32.8 8 34.2	A handsome brick tower, 120 feet high, at entrance to Docks	●	110	10	....
Geestemünde	.....	One red, 1 green fix. lt.; in one lead up to entr. Lieboat station. Time-ball .....	..	..	..	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Mile.	Year established.
JADE RIVER LT.-VES. Two bright fixed lights	53 48.7 8 1.4	In 6 fathoms, near N. end of Minsener Sand. Three masts, two black balls. Fog-bell.....	6a	50	10	1871
Minsener Sand Lt.-V. One fixed red light	53 45.4 8 5.1	Moored on E. side of channel, S. of Minsener Sand. In 9 fathoms. Red ball at main.....	..	51	..	....
Schillighorn 1. One fix. bright lt. 2. One fixed red lt.	53 42.3 8 1.8	1. Dark lt.-ho., surmounted by ball, 76 ft. above ground. Upper lt. red, vis. only 9 miles off, betw. N.E. $\frac{1}{2}$ E. and S.S.E. $\frac{1}{2}$ E. 2. Lower lt. shows only a small sector of lt. betw. S.S.E. $\frac{1}{2}$ E. & S.S.E. $\frac{1}{2}$ E. in the fairway of channel to the southward. Signal-station	..	69	12	1877
			..	69	11	1877
Hook-Siel One bright fixed lt.	53 38. 8 2.1	On West side of entrance to Jade River .....	..	..	..	....
Genius Bank Lt.-Ves. One fixed bright lt.	53 34.7 8 10.7	Painted red; moored in 29 ft. water. One mast with ball at mast-head. Vessels should pass eastward of the lt.-vessel. Fog-bell rung for 2 minutes in every 5 minutes .....	..	39	8	1878
Heppens Battery One fixed bright lt.	53 31.5 8 9.5	Shown from wooden beacon between S.W. and N. $\frac{1}{2}$ E. ....	..	36	..	....
Wilhelmshavn One green, one red lt.	53 31.3 8 9.5	Green lt. on N. mole-head, red lt. on S. mole-head .....	..	..	8	....
Varelsiel One flashing light One fixed bright lt.	53 24.8 8 11.1	From lt.-ho. of a dark colour, 96 ft. high, on Schlafmole. Upper lt. shows sector of double flash lt. to seaward, betw. N.W. $\frac{1}{2}$ N. and N. by E. $\frac{1}{2}$ E., and to eastward a sector of flash lt. betw. N. by E. $\frac{1}{2}$ E. and E.N.E. Lower lt. shows a 30° sector of lt. in the direction of channel N. by E. $\frac{1}{2}$ E. ....	..	89	13	1877
			..	79	13	1877
WANGEROOG One rev. br. lt., 1 min.	53 47.4 7 53.9	East part of Id.; tower red, 100 feet high; a beacon to E. by N. of church.....	4b	108	12	1866
NORDERNEY One br. flash. lt. 10 secs.	53 42.7 7 13.7	Lighthouse, 175 ft. high	1b	195	20	1874
BORKUM ISLAND One fixed bright light	53 35.5 6 40.4	On red brick tower, 110 ft. high, on Westland, at entrance of River Ems. Shown over sea horiz n. Lifeboat station	2a	142	18	1817
Termunterzyl One bright fixed light	53 18.2 7 2.2	At entrance to port .....	..	..	..	....
RIVER EMS BORKUM FLAT LT.-V. Br. fix. lts. on fore & mizen, red lt. at main	53 49.2 6 28.4	Moored in 13 fms. on Borkum Flat, N. by W., 18 miles from Borkum lt.-ho. In day, black ball on fore and mizen, cage on mainmast. Fog-bell 1 min. at intervals of 2 minutes ...	..	36	8	1875
			..	46	..	....
Knock One fixed bright lt.	53 20.3 7 3.	On the dyke of the Knock, at entr. Shown from N. by W. to S.E.	6a	29	8	1859
Delfzyl One fixed light	53 20. 6 56.1	(To Holland). At entrance to harbour .....	..	..	..	....
NETHERLANDS.						
ZUIDER ZEE (PRINCIPAL LIGHTS).						
Harlingen Two fix. leading lts.	53 10.6 5 24.7	Outer lt. on N. harbour mole. In one lead up, South of dam, through Pollen Channel	4a	56	10	1878
Stavoren Two fixed bright lts.	52 53.2 5 21.7	N.W. side of harbour .....	..	39	10	....
Urk Island One rev. br. lt. ev. m.	52 39.7 5 35.8	Square white tower on S.W. point. Flash of 10 secs. and eclipse of 50 secs. Pilots	4b	82	15	....
Sehokland Island One br., one red lt.	52 37.2 5 46.7	On the N. and S. points of the island. Fog-bell Pilots .....	..	47	8	1861
			..	34	10	....
Hoek, near Amsterdam One fixed bright lt.	52 22.3 5 1.1	At the angle of the river Y	4a	51	10	....
Marken Island One fixed bright lt.	52 27.3 5 8.6	On S.E. point .....	..	52	10	....
Geldersche Hoek One fixed bright lt.	52 44.6 5 17.2	A stone tower on the dyke .....	..	55	10	....
Wieringen Two fixed bright lts.	52 53.2 4 56.3	On W. part of island, N. and S., 448 yds. apart .....	..	39	6	....
			..	16	4	....

There are also small harbour lights for local service in the Zuider Zee at Workum, Hindelopen, De Lemme, Blokzyl, Genemuiden, Kampen, Elburg, Harderwyk, Nykerk, Muiden, Edam, Hoorn, Enkhuizen, Medemblik, &c.

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SCHIERMONNIKOOG Two fixed bright lights	53 28.8 6 9.8	Two red towers, on N. side of island. In one, S.E. by S., 1,102 yds. apart. N. lt. shown from N.E. by E. $\frac{1}{2}$ E. to W. by N. $\frac{1}{2}$ N. S. lt. shown to S. $\frac{1}{2}$ E. Lts. not shown over S. flats. Lifeboat and pilot station	1a	147	15	1854
AMELAND One fixed bright light	53 26.3 5 37.2	From iron stand on W. hill of Ameland, 550 yds. S. $\frac{1}{2}$ E. from Hallum beacon. Lt. vis. between N.E. by E. and S.E. by S.	a	49	12	1876
TERSCHELLING 1. One fixed bright lt. 2. One fixed light 3. One fixed light	53 21.7 5 13.1	1. On the Brandaris tower, near West end. Shown all round. Lifeboat and Pilot-station. 2. From wooden support, W. $\frac{1}{2}$ N., 436 yds. from Brandaris lt.-ho. Lt. shows white from N. to S.W., red to S. betw. S.W. and S.S.E. 3. On N. side of chan., 800 yds. S. of Brandaris	1a ..	177 49	24 ..	1864 1877
VLIELAND One fixed light	53 17.8 5 3.8	Red tower, on highest sand-hill, E. end. Lt. red to West of N. $\frac{1}{2}$ W.; bright to East. Lifeboat station	4a	151	12	1864
TEXEL ISLAND. One rev. br. lt., 1 min.	53 11. 4 51.6	Red tower, 98 ft. high, on N.E. extreme of island.....	2b	164	16	1864
Schulpe Gat Two bright fixed lts.	.....	Leading lts. N. lt. on Schilbois Nol, S. lt. on Stuijdijk, 860 yds. to S.W. $\frac{1}{2}$ W. Both shown between S.W. $\frac{1}{2}$ S. and W. by S. $\frac{1}{2}$ S.	4a 4a	28 21	8 8	........
Oude Schild 1. One fixed red lt. 2. One fixed br. lt. 3. One fixed br. lt.	53 2.4 4 51.3	1. From standard on West mole .....	..	..	..	1878
Nieuwe Diep One fixed bright light One fixed red lt. to S.	52 58. 4 47.	2. On East mole..... 3. At a dike on N. side of harbour, N.W. $\frac{1}{2}$ W. 219 yds. from East mole light. Life-boat .. On the Weirhoofd. In one, S.W. 51 yds. apart; only shown to Texel Road and Ström.....	.. ..	29 35	8 8	1843 1843
KYKDUIN One fixed bright light	52 57.3 4 43.7	Iron lt.-ho., 182 ft. high, painted brown. In line with Dirko msduin lt., 1,263 yds. S.W. of it, leads up to outer buoy of Schulpe Gat	1a	187	20	1853 1878
Schulpe Gat 1. One bright fixed lt. 2. One green or red lt.	52 56.8 4 43.2	1. On sand hills, 1263 yds. S.W. of Kykduin. Shows between W.S.W. and S.S.W. In one with Kykduin lt., leads to outer buoys	4a	61	12	1864
Zand-dyk Two bright fixed lts.	.....	2. Near Falga, $1\frac{1}{2}$ miles S.S.W. $\frac{1}{2}$ W. from preceding lt. Green from S. by E. to W. by N.; red in other directions.	●	..	4	1864
EGMOND-AAN-ZEE Two fixed red lights	52 37.2 4 37.6	Both shown from W.N.W. to N.W. by W. In line, lead to outer buoy of the Gat	4a ..	36 64	6 10	1871
AMSTERDAM SEA CANAL 1. Two fix. bright lts. 2. Two fixed red lts. 3. Two fixed blue lts.	52 27.7 4 35.5	Two stone towers on sand-hills, W. of village. In one, S.S.E. $\frac{1}{2}$ E., 408 yds. apart. Lifeboat	3a ..	120 126	16 18	1834
Zandvoort One fixed light	52 22.5 4 31.5	1. Shown from towers, painted red and white, on S. shore of canal, 612 yds. apart. In line, S.E. by E. $\frac{1}{2}$ E., lead in mid-channel through outer harbour to Nordseehaven.....	1a 1a	169 136	19 18	1878 1878
Noordwijk-aan-Zee Light for fishermen. Lifeboat	52 14.6	2, 3. The red lts. in line indicate the N. side of the outer harbour, and lead 16 ft. clear of the outer mole. The blue lts. in line clear the S. side of the harbour in the same manner...	●	56	4	....
Katwijk-aan-Zee Light for fishing-boats. Lifeboat.....	52 12.	N.W. of village, for fishermen. Lifeboat station	..	82	6	....
SCHEVENINGEN One rev. red and br. lt.	52 6.3 4 16.2	Dark-brown iron tower. Lt. shows br. & red alternately every $\frac{1}{2}$ minute	2b	167	18	1850 1876

The lights in the rivers above their entrances are not enumerated here, as they require exact local knowledge to utilise them.

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
HOOK OF HOLLAND CANAL	51 58.4 4 6.7	1. From sandhill on South shore of canal. Upper lt. S.E. $\frac{1}{2}$ S., 288 yds. from lower lt. In one lead 100 yds. S.W. of N. mole head, and up to white buoy No. 4 2. On N. shore of canal, near Krimslot, E. of harbour of refuge, 143 yards apart. In line S.E. $\frac{1}{2}$ E. lead through the Keel Chan., from N.E. of S. mole lt. up to abreast of E. white leading lt. on North shore 3. On N. shore, near refuge harbour, N.N.W. $\frac{1}{2}$ W. and S.S.E. $\frac{1}{2}$ E., 293 yds. apart. Leading lts. for upper part of canal 4. On North mole head when sea admits 5. On centre of S. mole, red seaward, white E. of black buoy No. 3 6. On Scheur mole, South shore of canal	.. | .. | 10	1873 1877		
VOORNE ISLAND.						
Brielle Harbour One fix. red or br. lt.	51 54.5 4 10.7	On end of mole, North of port. It is bright towards Rozenburg	.. | 16 | 4	1858		
Steenen Baak	51 55.7 4 8.5	One bright fixed light	● | .. | 4	....	
Noord Pampus Lt.-V. One fixed bright lt.	51 51.8 4 1.3	Painted red, and moored in 4 fms., near junction of Bokke and Norder Gats	.. | .. | ..	....
Kwak Hoek	51 49.9	Fixed light on point, 2 miles W. by N. from Hellevoetsluis	● | 34 | 8	1869		
Hellevoetsluis One bright or red lt.	51 49.2 4 7.7	On W. jetty head. Light is red from W. $\frac{1}{2}$ S. to W. $\frac{1}{2}$ N., and from S.E. $\frac{1}{2}$ S. to S.E.	● | 46 | 8	1858		
GOEREE ISLAND.						
GOEDEREDE One fixed light	51 49.1 3 58.8	On church tower. Red towards E.N.E. to N.E. by E., over N. Pampus	2a | 148 | 18	1856		
Kwaden Hoek One fixed bright lt.	51 50.2 4 0.	Wooden frame, at $\frac{1}{2}$ mile N.E. by E. from Goedereede church light	● | 115 | 5	1857		
Yzeren Baak One fixed light	51 49.8 3 50.1	On iron beacon, on N. coast, 2 miles N.W. by W. from Goedereede church. Light red between N.N.W. and N. $\frac{1}{2}$ E.	4a | 98 | 10	1858 1872		
SCHOUWEN ISLAND.						
Ossenhoek One bright fixed lt.	51 44.6 3 53.2	On end of pier, W. of Brouwers-haven Road	4a | 22 | 10	1859		
BROUWERS HAVEN GAT Two fixed bright lts.	51 44.5 3 47.2	Red iron and stone towers at Renesse, on N. side of island, E.S.E. $\frac{1}{2}$ E., 800 yds. apart. In one, lead into the Gat. Lifeboat station	3a | 148 | 16 4a | 82 | 12	1848		
Verklikker One bright fixed lt.	51 43.5 3 42.9	Guide light on N.W. part of island, to show anchorage. A green lt. at $\frac{1}{2}$ mile to E. $\frac{1}{2}$ N.	.. | 55 | 6	....	
SCHOUWEN One rev. br. lt. $1\frac{1}{2}$ m.	51 42.5 3 41.8	A fine stone tower, 166 ft. high, on W. end of island. Shows all round horizon	1b | 171 | 20	1744 1840		
WALCHEREN ISLAND.						
Oosterhoofd One fixed red light	51 35.5 3 33.7	Light on sandhill, N. side of Id. Vis. seaward and over Roompot betw. E.N.E. & W.S.W.	● | 33 | 4	1877		
WEST KAPELLE Two fixed bright lts.	51 31.8 3 26.9	1. On old church tower, N.W. pt. of id. Obscured E. of N.N.E. to clear Buijaard Banks 2. On tower on sea dyke, 1,530 yds. N. $\frac{1}{2}$ W. from old lt.; vis. betw. N. by E. & S.W. by S. In line with Westkapelle lt. S. $\frac{1}{2}$ E. leads through East Gat, between Steen Banks	1a | 144 | 15 3a | 59 | 13	1818 1876		
Domburg One fixed red & br. lt.	51 33.8 3 20.5	On high dune. Red from N.W. $\frac{1}{2}$ W. to W. by N. $\frac{1}{2}$ N., & white to southward. While passing red sector, Westkapelle lts. must be kept in line until white lt. is visible, when Kaapduinen lts. must be brought in line	4a | .. | ..	1876		
Zouteland One bright fixed lt.	51 30.2 9 29.	On a sand hill S. 15° W. from W. Kapelle lt. Shown up the Oostgat, from S. to S.E. $\frac{1}{2}$ E.	4a | 45 | 10	1866		

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
WALCHEREN ISLAND—(continued.)						
Kaapduinen	51 28.3	1. On the sand hills. A guide up the Oostgat. In one, S.S.E. $\frac{1}{2}$ E., 378 ft. apart. Shown from N. by W. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ W.	4a	47	11	1866
1. Two br. fix. lts.	3 31.4	2. Shown only to southward, between E. $\frac{1}{2}$ N. and W. $\frac{1}{2}$ S. In line, they lead through S. part of Oostgat and into Flushing Roads ...	..	89	..	....
2. Two br. fix. lts.			..	92	8	1873
			..	26	6	1873
Flushing or Vlissingen	51 26.4	1. On Westhaven bastion	4a	49	10	....
1. One fixed br. lt.	3 34.7	2. At New Docks, 1873. Red lt. on W. pier, green lt. on East dam, bright light inside entrance				1873
2. One red, one green, one bright light						
WEST SCHELDE RIVER.						
Nieuwe Sluis	51 24.4	1. Iron tower and frame on the sea bank, opposite Flushing. In one, E. by S., 1,110 yards apart, lead up	3a	83	16	1868
1. Two br. fixed lts.	3 30.5	2. Shows red from E. by N. to N.E. by N., at 2,730 yds. westward from W. New Sluis lt. ....	..	43	13	....
2. One red or bright fixed light			●	26	4	....
Breskens	.....	Two fixed lights, on S. side of river .....	..	..	..	....
Borselen	51 25.	Iron tower on W. point of S. Beveland Id., on right bank; red betw. N.N.W. $\frac{1}{2}$ W. and N.W. $\frac{1}{2}$ W., thence br. to N. bank of river	4a	35	9	1847
One fixed bright lt.	3 44.					
Nieuwe Neuzen	51 20.7	N. by W. $\frac{1}{2}$ W. and S. by E. $\frac{1}{2}$ E., 530 yards from each other; N. lt. elevated 17 ft. ....	..	17	8	1875
Two fixed lights	3 48.5		..	32	10	....
Terneuse	51 20.5	Iron tower on W. jetty, on N. side of Axel Id.; red W. of N.W. by W. $\frac{1}{2}$ W.	4a	43	8	1846
One bright fixed lt.	3 50.					
Zendragt	.....	The centre (or lowest) and E. lts. in line, E. $\frac{1}{2}$ S. & W. $\frac{1}{2}$ N., lead in the fairway towards Terneuse. The centre and W. lts. in line, S.W. $\frac{1}{2}$ S., lead in fairway to the northward	..	34	..	1875
Three fixed br. lts.			..	16	..	....
			..	32	..	....
Baarland	.....	On point of S. shore of S. Beveland Id. Shows red N. of N.E.	4a	13	6	1867
One fixed light						
Biezelingsche-ham	.....	On S. Beveland; guide to the Kapelle Pass. N. by E. and S. by W., 590 yds. apart	4a	13	6	1867
Two bright fixed lts.			..	39	..	1875
Hanswest	.....	On West side of entrance to canal; red N. of W.N.W.	4a	31	9	....
One fixed light						
Welsoorde	.....	On dyke, N. of Welsoorde, S. bank of river ...	4a	30	9	1869
One bright fixed lt.						
Magere Merrie	.....	N.W. $\frac{1}{2}$ W., $\frac{1}{2}$ mile from Welsoorde light .....	..	50	..	1875
One fixed bright lt.						
Groenendyk	51 22.3	E. by S. and W. by N., 756 yds apart. E. lt. red, from E. by N. to E. $\frac{1}{2}$ N.; white, from E. $\frac{1}{2}$ N. to S.E. by E.; W. lt. white, from S.E. by E. $\frac{1}{2}$ E. to E. $\frac{1}{2}$ N. ....	..	17	..	....
Two fixed lights	4 2.5		..	38	..	....
Billand	51 24.5	N.N.W. $\frac{1}{2}$ W. and S.S.E. $\frac{1}{2}$ E., 220 yds. apart. S. lt. shows red W. of S. ....	..	27	..	1874
Two fixed lights	4 11.5		..	14	..	1874
Bath	51 24.2	N.E. by E. $\frac{1}{2}$ E. and S.W. by W. $\frac{1}{2}$ W. from each other. W. lt. red W. of S.W. by S. ....	..	30	..	....
Two fixed lights	4 12.5		..	23	..	....
Frederik Hendrik	.....	In one, S.S.E. $\frac{1}{2}$ E., lead up channel from Saefinge Lt.-ves. N. lt. red to southward, from W. by N. $\frac{1}{2}$ N. to S. ....	..	..	..	....
Two fixed lights						
Doel	51 18.7	Red over western shore to N., between N. $\frac{1}{2}$ E. and N. by E. $\frac{1}{2}$ E. ....	..	15	..	1874
One fixed light	4 16.					
Liefkenshoek	51 17.8	Near landing place	5a	16	..	1874
One fixed bright lt.	4 17.1					
Kruisichans	51 17.6	On cable above ruins of Fort de la Croix	5a	16	..	1874
One fixed bright lt.	4 19.3					

Lighthouses.

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Director of Apparatus	Height above H. W.	Visible in Miles.	Year established
WIELINGEN LT.-VES. One <i>red</i> flashing light	51 22.9 3 10.6	In 4½ fathoms; 4½ miles N.E. ½ N. from Blanckenberghe church; in line with the towns of Lissewege and Bruges. Two cones. Fog-bell	●	89	9	1868
NORTH HINDER LT.-V. One flashing br. lt. ev. 8 or 10 secs.	51 36.7 2 34.5	Has two masts, one red ball; in 20 fathoms, on E. side of bank. Fog Bell and Gong. Red buoy 2 miles to N. ½ E.	●	40	11	1858
WEST HINDER LT.-V. One revol. lt., ½ min.	51 22.5 2 26.4	Two bright, one red flash alternately; in 17 fathoms, at S.W. end of bank; pyramid at mast-head	●	40	12	1864
Knocke One fixed bright light	51 21.3 3 17.5	Stone tower, 68 ft. high, on the Dunes N. of the village	3a	87	12	1872
Heijst	51 20.3 3 14.2	Green fishing light on Custom-house.....	..	26	3	1874
Blankenberghe 1. One fixed bright lt. 2. One fixed <i>green</i> lt.	51 18.8 3 7.1	1. New tower, 68 ft. high, half a mile W. ½ S. from fort	3a	83	12	1872
		2. On W. mole, to guide fishing boats.....	6a	26	4	1877
OSTENDE One fixed bright light	51 14.4 2 55.9	Brick tower, 170 ft. high, 820 yds. E. by S. from N.E. angle of fortifications. Shown from W. ½ S. to N.E. ½ N.	1a	189	20	1860
Ostende Harbour						
West Pier	| ..... |	Green light all night. Three lifeboats .....	..	25	7	1849
<i>East Pier Tide Lights</i>						
1. One <i>red</i> light	| ..... |	1. Red lt. on the East pier-head, while 8 feet water; only when the harbour is practicable	..	25	5	1849
2. One <i>red</i> light		2. Red lt. on angle of jetty wall, from 11 till 16 ft. water, when it is extinguished .....	..	30	5	1868
3. One or two br. lts.		3. Bright lt., 300 ft., within E. pier-head, while 16 ft. water; and when 17 ft., a smaller br. lt., 13 ft. below it. In one with West pier green lt., shows direction of channel .....	..	40	7	1859
			..	27	..	....
Nieuport 1. One <i>red</i> fixed light 2. One <i>fixed</i> tide light	51 8.4 2 43.7	1. Brick tower, 90 ft. high, on West side of entrance. Red lt. shown northward, from W. by S. to E. ½ N.	3a	96	14	1868
		2. Tide lt. on W. side, while 12 ft. water. Two lifeboats.....	..	32	8	1825
Pannes One fixed <i>green</i> light	51 6.2	Fishing light from iron stand on sandhill near La Pannes.....	6a	49	5	1877

FRANCE

LIGHTHOUSES.

East. 85

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)			
DUNKERQUE					
1. One rev. br. lt., 1 m.	51 3.	1. Brick tower, 177 ft. high, between W. jetty and Risbon old fort. Lifeboat station			
2. One bright fixed lt.	2 21.8	2. On Heuruenar tower, at 2,400 yds. S. by E. $\frac{1}{2}$ E from entrance; shows only in the channel to N. by W. $\frac{1}{2}$ W.			
3. One tidal light		3. Lt.-ho. wh., 27 ft. high, 49 ft. within extr. of W. mole. Tide at less than 6 $\frac{1}{2}$ ft. above low water, & falling, lt. shows green, rising red. Tide over 6 $\frac{1}{2}$ ft. above low water, & rising lt. shows white, varied by flashes. Fog-bell...			
4. One fixed green lt.		4. On East jetty head			
				26	3 | 1863
DUNKERQUE ROAD.					
Out Buytingen Lt.-Ves.	51 12.9	Painted red. In 8 to 11 fathoms. Bears N. by W. $\frac{1}{2}$ W. 11 $\frac{1}{2}$ miles from Dunkerque lighthouse.		33	11 | 1863
One rev. red lt., $\frac{1}{2}$ m.	2 12.2				
Dyck Lightvessel	51 3.1	In 11 fathoms, at $\frac{3}{4}$ miles N. by W. $\frac{1}{2}$ W. from Gravelines lighthouse		34	10 | 1869
Two bright fixed lts.	2 3.5			23	.. | ....
Snow Lightvessel	51 3.5	In 11 fathoms, at 5 miles E.N.E. from Gravelines lighthouse		33	7 | 1869
One fixed red light	2 12.6				
GRAVELINES					
1. One fixed bright lt.	51 0.3	1. Tower, 89 ft. high, on Little Fort Philippe.	3a	95	15 | 1843
2. Two bright fixed lts.	2 6.5	2. Tide lts., 63 yds. apart, on S.W. mole, from 2h. before to 2h. after high water. Lifeboat station		20	6 | 1854
Walde Point	50 59.7	Iron beacon, 59 ft. high, on edge of sands	3b	34	10 | 1859
Br. lt., with red flash, 20 secs.	1 55.1				
CALAIS					
One fixed and flash. lt.	50 57.7	Flash every 4 minutes. Octagonal brick tower, 167 ft. high, at N.E. end of old fortifications	1d	190	20 | 1848
	1 51.2				
<i>Calais Tide Lights</i>					
1. One br. fix. lt., & two red lights	.....	1. On end of E. jetty; br. lt. 10 ft.; red below br. lt., 13 ft.; red above br. lt., 16 ft.; three lts., 20 ft. Fog-bell	4a	39	10 | ....
2. One red light		2. On end of W. jetty; all night. Lifeboat station			
CAPE GRISNEZ					
One rev. br. lt., $\frac{1}{2}$ min.	50 52.2	Tower, 79 ft. high, $\frac{1}{2}$ mile S. of cape. A powerful MAGNETO-ELECTRIC light	1b	226	25 | 1843
	1 34.9				1869
<i>Boulogne Tide Lights</i>					
1. Two fixed bright lts.	50 43.9	1. In one tower, on S.W. jetty head; higher lt. while 9 $\frac{1}{2}$ ft.; lower lt., from high water to 9 feet ebb. Lifeboat. Fog-bell	4a	43	9 | 1835
2. One red, one green lt.	1 35.1	2. On N.E. jetty. Green lt. while 9 $\frac{1}{2}$ ft. water. In line with red lt. indicates direction of stone foundation of the jetty. Lifeboat station		23	.. | ....
			4a	46	7 | ....
ALFRECK POINT					
One fixed and flash. lt.	50 41.9	A bright lt., with red flash every 2 min. Tower, 33 ft. high, $\frac{1}{2}$ miles S.W. of Boulogne	4d	161	12 | 1842
	1 33.7				
CANCHE or Etaples River					
Carniers Sandhills	50 33.1	Shown from white towers on N. side of river; when in line, bear E. northerly; formerly served as leading lts. Lower lt. is red. In line, lead over Touquet Bank		121	10 | 1874
Two fixed lights	1 36.8			54	9 | 1874
Point Touquet	50 31.4	Two fine brick towers, 171 ft. high, at S. side of mouth of river, N. by E. $\frac{1}{2}$ E. and S. by W. $\frac{1}{2}$ W., 273 yds. apart	1a	174	20 | 1868
Two fixed bright lts.	1 35.5				
Point Haut Banc de Berck					
One br. intermitting lt.	50 24.	Tower, 92 ft. high, on N. pt. of River Authie; lt. visible and eclipsed every 6 secs.; obscured toward S. $\frac{1}{2}$ E., and over dangers. Lifeboat	4c	115	14 | 1869
	1 33.5				

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SOMME RIVER.						
<i>Crotoy tide light</i> One fixed bright light	50 12.9 1 37.3	On N. side of entrance. Tide light, while 3 ft. water in entrance	●	25	4	1851
<i>Hourdel Point tide light</i> One fixed bright lt.	50 12.9 1 33.9	On mast, 33 ft. high, on S. side of entrance. Tide light, while 2 ft. Fog-bell.....	●	36	6	1852
CAYEUX One fixed & flash. lt.	50 11.7 1 30.7	Tower, 89 ft. high, on S. side of entrance. Fixed lt., with flash every 4 minutes	3d	92	15	1835
<i>Cayeux tide light</i> One fixed bright lt.	.....	On a mast, at 812 yds. S.W. of Cayeux Light, from 3½ hrs. flood to 1½ hrs. ebb	●	36	6	1856
St. Valery-sur-Somme 1. One red fixed lt. 2. One fixed green lt.	50 11.5 1 37.5	1. On iron stand, in front of Harold's Tower... 2. From pillar, on mole-head	4a ..	25 25	5 5	1868 1877
Trepport 1. One red fixed light 2. One <i>fl. br.</i> tide light	50 3.9 1 22.1	1. On iron stand, on end of East jetty..... 2. Brick tower, 27 ft. high, on W. mole. Fog-bell. Bright tide light, while 6½ ft., in the channel	4a 4a	22 36	5 10	1861 1866
Dieppe						
West Mole One fixed bright lt.	49 56. 1 4.9	Stone tower, 32 ft. high. Flag by day. Fog-bell sounded for 2 min. One ring in intervals indicates 13 ft. water in channel; two rings 16½ ft., and so on.....	4a	39	10	1834
East Mole Tide Lights Three fixed bright lts.	.....	On a mast. Lowest lt. all night; highest lt. from 2½ hrs. before to 2 hrs. after high water; middle lt. from 2 hrs. before until high water. The two latter not shown when harbour is inaccessible.....	●	23 31 27	4	1843
Ailly Point One rev. br. lt., 1 min.	49 55.1 0 57.5	Square tower, 66 feet high, on the point. Eclipses not total within 12 miles.....	1b	306	27	1852
St. Valery-en-Caux 1. One red fixed light 2. One bright tide light	49 52.1 0 42.7	1. Red lt. on end of E. jetty. Flag by day ... 2. Tide lt. on brick tower, 31 ft. high, near end of W. jetty, while 8½ ft. water	4a ●	24 33	5 6	1857 1857
FECAMP One fixed bright light	49 46.1 0 22.1	Square tower, 56 ft. high, on Fagnet Point, above the chalk cliff. Sometimes obscured by fog.....	1a	426	25	1836
Fecamp Harbour Fixed lt., with flash, 3 m.	.....	On N. jetty, while 10 ft. Fixed red lt. on S. jetty	4c 4a	39 27	10 6	1838 1859
RIVER SEINE.						
LA HEVE Two fixed bright lts.	49 30.7 0 4.1	Two towers, 66 ft. high, on the summit of the cape, S.W. & S., 69 yds. apart. MAGNETO-ELECTRIC lights	1a	397	25	1845
HAVRE 1. One fixed br. lt. 2. Two fixed red lts.	49 29. 0 6.1	1. On N.W. jetty. Fog Trumpet	4a	36	10	1843
		2. One on S. pier in line with another on great quay lead into harbour. A lantern, with coloured glasses, on the quay. Lifeboat station.				
Hoc One fixed bright lt.	49 28.8 0 11.2	On the point, N. bank of River Seine	4a	39	10	1841
Mesnil	.....	One fixed lt., 1½ mile from Tancarville	4a	23	7	1861

Name and Character of Light.	Lat. N. Long. E. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RIVER SEINE—(continued).						
Quillebeuf One fixed bright lt.	49 28.5 o 31.5	S. shore of River Seine. On N. end of quay... Between Quillebeuf and Caudebec several fix. lts. are shown on either bank of the river. Between Caudebec and Rouen, 15 br. lts. on the right bank, and 12 red lts. on the left bank of the river, are shown	5a	33	10	1862
La Roque	.....	Bright fixed light on South point.....	4a	180	18	1867
La Roque Bank	.....	One red light on extreme of spit .....	..	..	..	1863
Rille River	.....	One red fixed light to South	4a	33	7	1867
Seine Canal	.....	One bright fixed light on North embankment ..	..	..	5	1850
Berville	.....	One bright fixed light $\frac{1}{2}$ mile West of church	1d	420	20	1850
FATOUVILLE One fixed & flash. lt.	49 24.9 o 19.4	Octagonal tower, 105 ft. high, on the heights. Bright lt., with red flash, every 3 minutes...	1d	420	20	1850
Honfleur 1. One fixed br. lt. 2. One fixed red light 3. Tidal lights 4. One fixed green lt.	49 25.5 o 13.6	1. On hospital jetty, N.W. end of town. Bell 2. White iron tower, 39 ft. high, on W. pier... 3. From brick tower on end of E. pier. Shown while 64 ft. or more water in channel. Additional depth shown by flashes; each red flash indicates 3 ft. $\frac{3}{4}$ in. (1 metre) additional, and each green flash 10 in. ($\frac{1}{2}$ metre) 4. At extreme of breakwater constructing	3a	82 33 39	14 6 9	1857 1876 1876
TROUVILLE						
1. Deauville One red fixed light	49 21.8 o 4.7	1. On W. side of entrance to Touques River. Visible between N. by E. and W. by N. $\frac{1}{2}$ N.	4a	62	10	1853 1875
2. East Pier One green fixed lt.		2. Near end of East Pier.....	4a	33	7	1860
3. West Pier One tide light		3. Near end of W. Pier; lighted when 64 ft. in channel. Br. seaward, red to E. of N.E. by N. up Villerville Chan., and inside entr.	5a	26	8	1875
Dives Two red tide lights	Long. W. 49 17.7 o 5.3	On Beuzeval Mount and Fort, while 6 ft. water. In one, lead in.....	.. ..	148 10	9 7	1866
L'Orne River Two fixed bright lights One red tide light One green light	49 16.6 o 15.6	Bright lts. on church and redoubt of Oyestreham, W. side of entrance. In one, S.W. $\frac{1}{2}$ S., 1,203 yds. apart. Red tide lt. on W. jetty, from 3 hrs. before to 3 hrs. after high water On E. side of channel, at Oyestreham; shown from 3 hrs. before to 3 hrs. after high water	5a ● ● ●	92 39 .. 30	10 5 4 4	1843 1855 1878
Courseulles One fixed bright light	49 20.3 o 27.5	On a mast, on W. jetty head	●	30	6	1857
POINTE DE VER One fixed & flash. lt.	49 20.5 o 31.2	Square tower, 43 ft. high, on a hillock, 800 yards from the shore. Fixed lt., with flash every 4 minutes	3d	138	15	....
Port-en-Bessin Two fixed lights	49 21.1 o 45.6	In one, S.W. by W., 79 yds. apart. High tide lt. is red, while 12 ft. on the bar	● ..	131 92	8 6	1854
Grandcamp One fixed bright light	49 23.4 i 2.6	On a mast, 875 yds. West of church	●	26	3	1856
Port D'Isigny Two fixed bright lights	49 19.3 i 6.7	In one, S. by W. $\frac{1}{2}$ W., 306 yds. apart, lead in ..	● ..	46 23	10 8	1852
Carentan One red, one bright lt.	49 20.6 i 11.3	Bright lt. at Brevand; red lt. on sea bank. In one, S.W. $\frac{1}{2}$ W., lead in	● ..	49 16	7 7	1868

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
St. Marcouf One fixed bright light	49 29.9 1 8.9	On the fort, East of Sand-fly Island	4a	56	10	1840
Morsaline One fixed bright light	49 34.3 1 19.4	On the mound; much higher than La Hougue light. In one with it, shows N. limit of roads	5a	232	10	1836
St. Vaast La Hougue One red fixed light	49 34.2 1 15.6	A small tower, 29 ft. high, on jetty. Fog-bell	..	36	5	1865
La Hougue One fixed bright light	49 34.3 1 16.4	Square turret, 29 ft. high, at S. end of fort ...	4a	36	10	1836
Saire Point One fixed bright light	49 36.4 1 13.9	On Reville Redoubt. In one with Cape Bar- fleur lt., shows E. limit of dangers off Ta- thou Island.....	4a	36	10	1836
Barfleur Two fixed bright lights	49 40.1 1 15.8	On South side of entrance, S.W. by W. $\frac{1}{2}$ W., 309 yds. apart. In one, lead in. Lifeboat ...	6a 6a	23 43	8 9	1844
CAPE BARFLEUR One br. rev. lt., $\frac{1}{4}$ min.	49 41.8 1 16.	Circular tower, 233 ft. high, on the cape. Eclipses not total within 12 miles	1b	236	22	1836
Levi Cape One fixed and flash. lt.	49 41.8 1 28.5	Tower, 103 ft. high. Light bright, with red flash every 3 minutes	4d	115	12	1858
Béquet Port One bright, one red lt.	49 39.2 1 32.9	In one, S.W. $\frac{1}{2}$ S., 76 yds. apart, lead into the harbour	● ..	28 24	9 7	1862
CHERBOURG.						
Port de Commerce	.....	Red lt. on E. jetty, green lt. on head of W. jetty	4a	33 15	3 2	1838 1876
Pelee Island One fixed bright lt.	49 40.3 1 35.1	On Fort Imperial	5a	85	10	....
La Digue 1. One fix. & flash. lt. 2. One fixed green lt. 3. One red light	49 40.1 1 37.2	1. A white stone tower, 54 ft. high. Lt. br. fixed, with flash every 3 min., on central fort. 2. Green light on eastern head..... 3. Red light on W. head of breakwater	5d ● ●	66 63 39	10 4 10	1839 1843 1863
Querqueville Fort One fixed bright lt.	49 40.3 1 41.1	Turret, 52 ft. high, on the guard-house. Life- boat station	4a	59	10	....
CAPE DE LA HAGUE One fixed bright light	49 43.4 1 57.3	Circular tower, 154 ft. high, on the top of Gros du Ras Rock, half a mile W. $\frac{1}{2}$ S. from the cape	1a	157	18	1837
CHANNEL ISLANDS (British).						
Alderney						
Bray Harbour Two red lights	49 43.3 2 12.1	One on old pier; screened over all dangers. The other to S.W. by W. In one, they lead in	.. ..	55 25	5 3	1859
CASKETS or Casquets One flashing bright lt.	49 43.3 2 22.7	Tower on the highest rock. Light shows 8 flashes of 2 seconds, in quick succession, once in ev. $\frac{1}{4}$ min. Fog-horn gives 3 short blasts, of 2 secs. duration, once in ev. 5 min.	● ..	113 ..	15 ..	1723 1877
HANOIS ROCKS One red rev. lt., 45 secs.	49 26. 2 42.2	A grey granite tower, 117 ft. high, on S.W. rock; obscured by Guernsey, from W. by S. to N.W. Fog Bell every 15 secs.....	1b	100	14	1862
Guernsey						
St. Peter Port 1. One red fixed lt. 2. One br. fixed lt.	49 27.2 2 31.5	1. At entrance of inner harbour; bearing W. by N. $\frac{1}{4}$ N., it leads in .. 2. On E. extremity of Castle Cornet break- water. A temporary green lt. on N. jetty...	4a 3a	40 59	6 12	1832 1867

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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CHANNEL ISLANDS (British)—continued.**Jersey**

Verolut Breakwater One fixed bright lt.	49 13.3 2 0.5	White iron tower, on the outer end, in St. Catherine's Bay	6a	60	10	1857
St. Helier						
1. One fixed br. lt.	49 10.5	1. Br. lt. on Victoria or new S. pier	●	31	6	1858
2. One fixed red lt.	2 7.3	2. Red lt. on Albert or N. pier	●	15	3	1859
3. One fixed red lt.		3. Red lt. on upper pier road	●	46	3	1858
4. Two green lights		4. On Albert pier and esplanade	●	23	3	1867
Goeray Pier Head	.....	One fixed bright light .....	..	55	..	1857
LA CORBIERE ROCK One br. or red fix. lt.	49 10.7 2 14.8	Tower 62 ft. high. Lt. is bright seaward from N. by W. to S. by E., and red eastward of these bearings, to N.E. over Rigdon Bank, and to S.E. over Les Vrachères. Fog-bell 3 strokes once in ev. half min.	2a	119	17	1874
Dialette						
1. One fix. red or br. lt.	49 33.3 1 52.	1. On end of ne. pier; shows br. seaward and red from N.N.W. towards land over Huquets de Jerbourg and Basses St. Gilles. In line with inner red lt. S.S.E. $\frac{1}{2}$ E., leads in .....	..	23	9	1876
2. One fixed red light		2. At head of harbour. Lifeboat	●	75	9	....
3. One fixed green lt.		3. On old jetty head	●	23	6	1856
CAPE CARTERET One rev. br. lt., $\frac{1}{2}$ min.	49 22.4 1 48.5	Square tower, 49 ft. high, 100 yds. E. of cape. Life-boat station	2b	262	18	1839
Portball One bright, one red lt.	49 20. 1 43.	On church tower and Point Dune. In one, S.W. $\frac{1}{2}$ S., 953 yds. apart, they lead in	4a	64	8	1859
Senequet One fixed red light	49 5.5 1 39.8	Tower, 77 ft. high, on the Senequet Rock, in Deroute Passage	3a	65	10	1861
Regneville One fixed bright light	49 0.5 1 34.9	Square tower, 34 ft. high, on Agon Point	4a	33	10	1856
CHAUSEY ISLANDS One fixed and flash. lt.	48 52.2 1 49.4	Square tower, 56 ft. high, on S.E. point. A br. lt., with red flash every 4 minutes	3d	121	15	1847
MINQUIERS LT.-VES. Two bright fixed lights	48 53.6 2 17.5	Near S.W. extreme of plateau; two black balls. Fog-bell	4a	39	10	1865
GRANVILLE 1. One fixed bright lt. 2. One fixed red light	48 50.1 1 36.9	1. Tower, 42 ft. high, on Granville Rock, or Cape Lihou	3a	154	15	1825
		2. Red lt. on S.E. end of mole head, W. side of entrance. Lifeboat	4a	40	4	1839
Couesnon River One fixed red light	48 38.2 1 30.8	On W. side of Mont St. Michel, from 2 hours before to $1\frac{1}{2}$ hour after high water	4a	56	6	1671
La Pierre de Herpin <i>Proposed light</i>	48 44. 1 49.3	Proposed on rock, West of St. Michel Bay ..	..	..	..	....
La Houle One fixed red light	48 40.2 1 51.2	Tower, 37 ft. high, on La Fenestre Island, at Cancale	4a	33	6	1863
ST. MALO						
Ballue One green fixed light	48 37.6 2 0.3	Square tower, upper part black, on the hills, at 1,804 yds. S.S.E. $\frac{1}{2}$ E. from Sablons lt. ...	●	221	9	1868
Anse des Sablons One flashing green lt.	.....	Shown in place of fixed green lt. Kept in line with fix. green lt. at Ballue, bearing S.S.E. $\frac{1}{2}$ E., will lead to road of St. Malo	c	60	8	1877
St. Malo One bright fixed lt.	48 39. 2 1.7	Tower, 31 ft. high, on the mole des Noirs	4a	33	10	1842
Le Grand Jardin One fixed & flash. lt.	48 40.2 2 5.1	Tower, 92 ft. high, on S. end of islet. Light bright; flashes red and green alternately every 20 secs.	4d	65	12	1863
Roche Bonne One red fixed light	48 40.3 1 38.8	Tower, 59 ft. high, N. of St. Hyduce. Light shown from W. by N. $\frac{1}{2}$ N. to N.W. by W. $\frac{1}{2}$ W.	●	128	6	1868

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established
CAPE FREHEL One rev. br. lt., $\frac{1}{2}$ min.	48 41.1 2 19.2	Octagonal tower, 72 ft. high, on the cape, S.W. from old tower	1b	259	22	1847
Legue Port One fixed bright light	48 32.2 2 43.2	Round tower, 40 ft. high, on the jetty at Point Aigle, St. Brieu.....	4a	45	10	1857
Iles Saint Quay One fixed bright light	48 40. 2 48.6	Tower, 33 ft. high, on Harbour Island	4a	49	10	1850
Binic Port One fixed bright light	48 36.1 2 49.	Round tower, 33 ft. high, on Penthievre mole	4a	36	10	1854
Portrieux One fixed red light	48 38.8 2 49.5	White tower, 33 ft. high, on end of pier.....	●	29	3	1853
Trieux River 1. Two br. flash. lts., 8 s. 2. Two red fixed lts.	48 50.2 3 3.2	1. On Bodic heights, on W. side of channel; and on La Croix Rock, on E. side; 2 miles apart. Shown only in channel .....	..	176	12	1867
		2. On end of Coat-Mer Peninsula. In one, S. 39° E., lead up from La Croix lt. to the anchorage.....	..	45	10	1869
			●	161	8	1869
Brehat Isle Two fixed red lights	48 51.9 2 59.3	On Paon Rock and Rosedo Hill. In one, W. $\frac{1}{2}$ S., $\frac{1}{2}$ mile apart. Lifeboat station	4a	67	6	1860
ROCHES DOUVRES One flashing light	49 6.5 2 48.9	A fine iron tower, painted white, 118 ft. high. Eclipsed every 4 secs. A Fog-bell ev. 3 secs.	●	90	8	1869
HEAUX DE BREHAT Red fixed light, and red flashing light	48 54.5 3 5.3	A circular tower, 157 ft. high, on N.E. side of rocks. A red flashing lt. is shown to N.E. over Barnouic Ledge, betw. E.N.E. & E. $\frac{1}{2}$ N. A red fix. lt. is shown to S.E. over the dangers betw. S.E. $\frac{1}{2}$ S. & E. by S. $\frac{1}{2}$ S. Between these two sections of red lt. is a space of 23° clear of danger, except the Roch-ar-Bel.....	1a	148	..	1835
SEPT ILES One fixed and flash. lt.	48 52.7 3 29.5	Tower, 52 ft. high, on E. end of Ile aux Moines. Flash every 3 min. Hidden to E. $\frac{1}{2}$ N. by Rouzie Island, &c.	3d	184	15	1825
TRIAGOZ One fixed and flash. lt.	48 52.3 3 38.9	Tower, 92 ft. high, on Guen Bras Rock; red and bright flashes alternately every $\frac{1}{2}$ min.	3d	98	12	1862
Treguier River 1. Outer fixed br. lt. 2. Inner red light 3. One fixed light	48 51.5 3 8.	1, 2. Bright light on Harbour Mill; red lt. on St. Antoine Mill. In one, S.S.E., lead into the Grand Passe.....	4a	105	9	1864
		3. Shown from La Corne Rock. Sector of 74° green lt. in channel to E.N.E., red S. of that bearing. A sector of 74° br. lt. over inner anchorage to W.S.W. Enter with white & red lts. in line S.S.E. until green lt. appears, when steer for it, pass westward of La Corne Rock, and anchor with br. lt. in sight	4a	46	6	1876
			..	38	..	1876
Perros Road 1. One fixed bright lt. 2. One fixed bright lt. 3. One bright fixed lt. 4. One bright fixed lt.	48 48.1 3 23.9 48 46.7 3 28.4	1. Near Nantouar Bridge	●	33	10	1860
		2. Near Kerjean Farm, 750 yds. S.E. of No. 1. In one, they lead up the western channel ..	●	253	12	1860
		3. Behind Pigeon-house, on S. shore of bay ...	●	89	12	1860
		4. Near Kerprigent Mill, 3,133 yds. S.W. of Pigeon-house lt. In one, they show the direction of the eastern channel, and into the road	●	259	14	1860
Ploumanac'h Port One fixed red light	48 50.3 3 29.1	Square tower, 36 ft. high, on the point	4a	69	5	1860
Morlaix 1. Ile Noire One fixed & flash. lt. 2. Tour la Lande One fixed bright lt. 3. One red fixed light 4. One bright fixed lt.	48 40.4 3 52.6 48 38.2 3 53.2	1. Square tower, 43 ft. high. Light, with flash every 2 min. Fog-bell. Tidal signals for Treguier Channel	4d	46	10	....
		2. Square tower, 56 ft. high. Nos. 1 and 2 in one, show the direction of the eastern channel.....	●	..	..	....
		3. On the Chateau du Taureau for the anchorage in N. part of Morlaix Road	●	34	2	....
		4. On Jardin or Louet Island. Nos. 4 and 2 in one, show the entrance of the western or Grand channel. Pilots necessary.....	4a	52	10	1860

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
ILE DE BAS One rev. br. lt., 1 min.	48 44.7 4 1.7	Circular tower, 181 ft. high, on W. part. A bell buoy on the Basse Plate	1b	233	24	1836
Pta. de Pontusval One bright fixed light	48 40.7 4 21.2	Square building, 43 ft. high, on the point	a	59	10	1869
ILE VIERGE One fixed and flash. lt.	48 38.4 4 34.2	Square tower, 101 ft. high, on E. point. Bright fixed light, with red flash every 4 minutes...	3d	108	15	1845
Abervrac'h 1. One red fixed light 2. One bright fixed lt.	48 36.9 4 34.7	1. White tower, 36 ft. high, on Vrac'h Island. Life-boat station	4a	59	7	1845
		2. On W. side of Plouguerneau Steeple, at 70 ft.; both lts. shown down the channel. In one, S.E. by E. $\frac{1}{2}$ E., $1\frac{1}{2}$ mile apart, lead into the channel.....	4a	170	12	1868
3. One green fixed lt. 4. One bright fixed lt.	48 35.8 4 33.5	3. On E. point of Palme Beach	•	29	3	1845
		4. At head of St. Antoine Creek. In one, lead to anchorage	4a	49	4	
OUESSANT, or USHANT 1. One bright fixed lt. 2. One rev. lt., 20 secs.	48 28.5 5 3.5	1. Two towers united, 85 ft. high, on the N.E. point	1a	272	24	....
		2. Circular tower, 152 ft. high, black and white bands, on Creac'h, or N.W. point. Light twice bright, once red. Fog-trumpet.....	1b	223	22	1864
LE FOUR ROCK One alternating fixed or flashing light	48 31.3 4 47.5	Stone tower 22 ft. high. Lt. bright and fixed for 30 secs.; then 5 flashes in 30 secs. Steam fog-trumpet, blasts of 5 secs. every 20 secs.	3b	92	15	1874
Conquet Port One fixed bright light	48 21.7 4 47.5	Square tower, 59 feet high, on Kermorvan Point. Lifeboat station	3a	72	12	1849
LES PIERRES NOIRES One red flashing light	48 18.7 4 55.	Square tower, 82 ft. high, on Le Diamant Rock. Flash every 10 secs. Rocks stretch $\frac{1}{2}$ of a mile to S.W.	3b	90	12	1872
ST. MATHIEU One rev. br. lt., $\frac{1}{2}$ min.	48 19.8 4 46.7	Tower, 82 ft. high, on the point	2b	177	18	1835
BREST Minou Point One fixed bright lt.	48 20.2 4 37.	Tower, 79 ft. high, on Petit Minou Point	3a	105	15	1848
Portzic Point One fixed & flash. lt., 3 min.	48 21.5 4 32.2	Tower, 108 ft. high, 4 miles E. $\frac{1}{2}$ S. of Minou light. In one with Minou light, N. 69° E. true, leads clear to the entrance of Brest Channel.....	2d	184	18	1848
Brest 1. One green, 1 red lt. 2. One bright, 1 red lt.	48 22.7 4 29.3	1. White iron towers on the jetty heads of Port Napoleon. Fog-bell	4a	33	7	1868
		2. At Commercial Port. Br. lt. at end of E. pier, red lt. on W. end of S. pier				
Brest, Bay of One bright fixed lt.	48 19.2 4 34.6	On Capucins Pt., W. side of Keleren Peninsula. Lt. shown eastward betw. E. $\frac{1}{2}$ N. & E. by S. To the northward a ray of lt. is shown over Les Fillettes Rocks	3a	207	13	1864
Toulinguet Point One fixed red light	48 16.8 4 37.9	Square tower, 39 feet high, on S.W. side of entrance. Lifeboat	4a	161	10	1849
Douarnenez Bay One fixed bright light	48 6.2 4 21.4	Round tower, 31 ft. high, on summit of Ile Tristan. Lifeboat station	4a	114	10	1857
Port Douarnenez One fixed red light	48 5.8 4 19.5	Iron pillar on Rosmeur mole .....	..	23	5	1872
ILE DE SEIN One fixed and flash. lt.	48 2.7 4 52.	Round tower, 142 ft. high, on North point of island. Bright flash every 4 min. Lifeboat station. (Proposed to be shifted to West extreme of Chaussée)	1d	148	20	1848
Armen Rock	.....	Lt.-ho. building on western part of Chaussée de Sein, $\frac{1}{2}$ miles West of Isle de Sein lt.-ho. ...				

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RAZ DE SEIN						
TEVENNEC ISLAND One flashing lt. every 4 secs.	48 4.3 4 47.8	Lt.-ho. of brick, 82 ft. high; lt. shows white in channel to S., betw. S. $\frac{1}{2}$ W. and S. by E.; red from S. by E. to S.E. $\frac{1}{2}$ E.; and white to N., from S.E. $\frac{1}{2}$ E. to W. by N. $\frac{1}{2}$ N.; obscured over the Chaussée de Sein.	..	92	13	1875
POINTE DU RAZ Two fixed bright lts.	48 2.4 4 44.1	In one with Ile de Sein lt., shows direction of Chaussée. High lt. from square tower, 49 ft. high. Lower lt., 220 yds. distant, shows only 2 sectors, one over La Vieille rocks, betw. W. and N.W. $\frac{1}{2}$ W.; the other betw. N. by W. $\frac{1}{2}$ W. and N. by E. in channel to E. of Tevennee. These two lts. in line lead on to the Plate Rock W. of Tevennee.	1a ..	259 207	18 10	1843 1875
Audierne Port 1. One fixed red light 2. One fixed bright lt.	48 0.6 4 32.5	1. On Raoulle Point 2. Near Capuchin Garden. In one, N.E. $\frac{1}{2}$ N., 1,203 yds. apart, lead clear of Gamelle Rocks	● 5a	36 69	5 12	1856
PENMARC'H POINT One rev. br. lt., $\frac{1}{2}$ min.	47 47.9 4 22.6	Circular tower, 131 ft. high, on the point, near the church of St. Pierre	1b	135	22	1836
Gallifée Two red fixed lights	.....	At 8½ miles eastward of Penmarc'h. Shown only through the channel. In one, E. by N. $\frac{1}{2}$ N., 620 yds. apart, lead in .....	.. ..	50 19	9 4	1871
Loc-Tudy One bright fixed light	47 49.9 4 9.6	Round tower, 31 ft. high, on S. side of Pont l'Abbé River entrance	4a	35	10	1863
Odet River One fixed red light One bright light	47 52.3 4 6.8	Round towers, 36 and 30 ft. high, on Coq Point. In one, S. $\frac{1}{2}$ W., 291 yds. apart, lead in	4a ●	33 56	7 9	1848
GLENAN ISLANDS One fix. red, bright and green light	47 46.5 4 1.8	Lt.-ho., a brick tower, 49 ft. high, on Isle aux Moutons. Lt. red betw. N. by W. $\frac{1}{2}$ W. and W. by N., green betw. W. by N. & W. by S. $\frac{1}{2}$ S., br. over fairway betw. W. by S. $\frac{1}{2}$ S. & S.W. $\frac{1}{2}$ W., red betw. S.W. $\frac{1}{2}$ W. & S.E. $\frac{1}{2}$ E., & br. betw. S.E. $\frac{1}{2}$ E. and N. by W. $\frac{1}{2}$ W. ...	.. .. ..	59	12 8 7	1878
PENFRET One fixed and flash. lt.	47 43.3 3 57.3	Square tower, 73 ft. high, on North point of island; one of the Glenan Islands. Fixed lt., with flash every 4 minutes	3d	118	15	1828
Concarneau Two fixed bright lights	47 52.2 3 55.2	On Croix Battery, and betw. Concarneau and Beuzec. In one, N.E. $\frac{1}{2}$ E., 2,052 yds. apart, show Concarneau Road	4a ●	46 177	9 12	1849
Lanrieo Avon River White, red, or green lt.	..... 47 48.1 3 44.5	Red light on E. shore of Concarneau Port On the Bec-ar-Veehen. Bright lt. in fairway, from W. by S. $\frac{1}{2}$ S. to S. by E.; red to S.; green to N.	● ..	135 125	9 8	1857 1868
Donelan Port Two bright fixed lights	47 46.3 3 35.7	Turrets, 83 ft. high each, on E. & W. of entr. In one, S. $\frac{1}{2}$ W., 356 yds. apart, they lead in...	4a 4a	82 118	8 ..	1861
ILE DE GROIX 1. One fixed bright lt. 2. One fixed & flash. lt.	47 38.9 3 30.8	1. Square tower, 75 ft. high, on Penmen Pt., at N.W. end of island, $\frac{1}{4}$ of a mile in-shore... 2. Square tower, 39 feet high, on Fort de la Croix, on E. part of island. Red flash every 3 minutes. Lifeboat station	1a 4d	194 171	18 10	1839 1845
L'Orient 1. Two fixed bright lts. 2. Two fixed bright lts. 3. Two fix. leading lts. 4. Two fix. leading lts.	47 44.9 3 20.8	1. One on church tower, one at Laperrière. In one, N.N.E. $\frac{1}{2}$ E., lead into Little Pass 2. E. side of Grand Passe. In one, E. $\frac{1}{2}$ N., lead into Grand or Western Passage 3. At Keroman Creek. High red lt.; lower green lt., S. 12° W. from high lt. In one, lead between Turo Bank and opposite shoals 4. At Kernevel Bay. High lt. red; low lt. green, N.E. $\frac{1}{2}$ E., 328 yds. from high lt. In line aster indicate channel, from their intersection with the line of Keroman lts. to Penmané anchorage	● ● ● ..	148 75 20 62 44 10 30 6	12 12 9 12 9	1852 1850 1857 1877 1877
Etel River One fixed red light	47 38.7 3 12.9	On a house, at entrance of river. Lifeboat station	4a	20	3	1859
BELLE ILE						
Sauzon Port One fixed red light	47 22.4 3 13.2	Circular turret, 27 ft. high, on end of mole. Lifeboat station	4a	30	7	1859
Palais Port One fixed bright lt.	47 20.9 3 9.3	Circular turret, 27 ft. high, on mole head, S. side of entrance	4a	30	10	1826

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BELLE ILE—(continued).						
GOULFAR BAY One rev. br. lt., 1 m.	47 18.7 3 13.7	Circular tower, 151 ft. high, on S.W. part of island.....	1b	276	27	1836
PTE. DES POULAINS One br. flash. lt., 5 s.	47 23.3 3 15.2	Square white tower, 54 ft. high, on N. point. In one with Goulfar Bay lt. clears Birvieux.....	3d	112	14	1868
Hædie Island One fixed bright lt.	47 20.5 2 52.2	Tower, 39 ft. high, 600 yds. W. from E. point of island	4a	85	10	1836
QUIBERON BAY						
La Teignouse One fix. & flashing lt., 3 min.	47 27.4 3 2.8	Circular tower, 51 ft. high, on the rock, S.E. of Quiberon Peninsula. In one with Navalo light, leads to W. entrance of Pass	4d	59	12	1848
Port Haliguen One fixed bright lt.	47 29.2 3 5.9	Tower, 37 ft. high, on N. jetty. Lifeboat station	4a	40	10	1856
La Crae'h One red, one br. lt.	47 34.1 3 0.4	On left bank of river, N. by E. and S. by W., 574 yds. apart; red lt. to S. In one, lead in	4a ●	29 69	9 10	1856
Navalo Port One fixed bright lt.	47 32.9 2 54.2	Tower, 33 ft. high, on the S. point of entrance to Morbihan. In one with Teignouse light, leads to W. entrance.....	4a	72	15	1864
Penlan Point One fixed bright light	47 31. 2 30.2	Tower, 31 ft. high, on the point	4a	52	10	1844
LE FOUR One rev. br. lt., $\frac{1}{2}$ min.	47 17.9 2 38.1	A round stone tower, 92 ft. high, on the rock	2b	79	18	1822
Croisic Port Two fixed bright lights	47 17.9 2 31.1	On a mast near the church, N. and S., 50 yds. apart. In one, they lead in	● ..	13 33	6 ..	1838
Trehic Jetty One br. or red fix. lt.	47 18.5 2 31.5	Stone tower, 33 ft. high, at entrance to Port Croisic. Lt. bright to between N.N.W. and W.N.W.; the rest red	5a	39	10	1874
La Banche One fixed red light	47 10.6 2 27.2	Stone tower, 37 ft. high, on the Ture Rock ...	..	70	9	1865
Port Pouliguen One fixed bright light	47 16.5 2 25.8	On jetty head; only visible from S. to S.E....	..	23	5	1871
LOIRE RIVER						
Point l'Eve One fixed red light	47 14.5 2 16.1	Marks the channel to the town of St. Martin	6a	102	6	1856
Aiguillon Tower One fixed bright lt.	47 14.6 2 15.9	Circular tower, 67 ft. high	3a	118	12	1857
Commerce Tower One fixed & flash. lt., 2 min.	47 15.4 2 15.1	Circular tower, 106 ft. high. In one with Aiguillon light, cuts E. part of Charpentier Bank; therefore keep it open a little to East. Flash every 2 minutes.....	3d	198	14	1857
Ville-es-Martin Point Red revol. lt., $\frac{1}{2}$ min.	47 15.4 2 13.4	Stone tower, 41 ft. high	3b	33	10	1865
St. Nazaire One fixed bright lt.	47 16.3 2 11.9	On new mole head. Tide Signals	4a	26	8	1836
Paimboeuf Port One fixed bright lt.	47 17.4 2 2.	End of mole.....	4a	26	8	1855
Pierre a l'Oeil One fixed red light	.....	From stone tower, $4\frac{1}{2}$ cables W. of Paimboeuf lt., in line with which, bearing S. 75° E., leads in main channel of Loire River .....	..	15	8	1876

Lights are proposed at St. Nicholas Island and Mindin Tower.

Name and Character of Light.	Lat. N. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Pornic Port One fixed bright light	47 6.6 2 7.	Square tower, 36 ft. high, on Novellard Point	4a	59	9	1846
PILIER ISLAND One fixed and flash. lt.	47 2.6 2 21.7	Round tower, 97 ft. high, on N.W. point. Flash every 4 min. Red sector covering La Couronnes Reef; and another over the Plateau des Boufs.	2d	105	18	1829
Noirmoutiers Island One bright or red light	47 0.7 2 12.9	Square tower, 52 ft. high, on Pte. des Dames; white to seaward; red lt. to westward; from E. by S. to N. by E. $\frac{1}{2}$ E. Red sector over Plateau des Boufs.	a	111 ..	10 7	1867
ILE D'YEU One fixed bright light	46 43.1 2 23.	Circular tower, 108 ft. high, on mound of Petit Foule, 1,860 yds. from N. point	1a	177	18	1862
Breton Port Two fixed bright lts.	46 43.6 2 21.	One on outer jetty, N. side of entrance; and one at head of harbour, 284 yds. apart. In one, lead in. A red lt. is shown on S. side of entrance	4a 4a	26 66	8 9	1837 1845
Pte. des Corbeaux One red fixed light	46 41.4 2 17.2	Stone tower, 38 ft. high, on S.E. point. Lifeboat station	4a	64	7	1862
St. Gilles-sur-Vie One fixed red light	46 41.8 1 56.9	Tower, 27 ft. high, on extremity of N. side of jetty	4a	39	7	1852
Sables d'Olonne 1. One fix. bright lt. 2. One fix. bright lt. 3. Two fixed red lts.	46 29.7 1 47.4	1. Tower, 85 ft. high, at La Chaume, on W. side of entrance to Olonne. 2. On jetty, E. side of entrance. In one with La Chaume lt., shows direction of Great Channel. Lifeboat station. 3. S.E. of town. In line, E. by N. $\frac{1}{2}$ N., lead up S.W. pass. Two red lts. are also shown on Chaume quay, as leading lights between the jetties.	4a 4a	105 23	12 8	1826 1855
BARGES D'OLONNE One br. lt., with red flash	46 29.7 1 50.7	Circular tower, 80 ft. high, on the Grand Bank; red flash every 8 min.; bell buoy half a mile to S.	3c	75	15	1866
ROCHE BONNET-L'VES. Two bright fixed lights	45 12. 2 20.8	Painted red, in 26 fms., on E. part of plateau. Three masts of equal height, and balls on two of them. Fog-bell	● ..	46 33	10 ..	1866
PERTUIS BRETON						
Grouin du Cou Point One fixed bright lt.	46 20.7 1 28.1	Square tower, 46 feet high	4a	92	10	1859 1867
Aiguillon Point One fixed bright lt.	46 16.2 1 12.4	Wooden beacon, 38 ft. high, bearing S. by E., leads on to middle channel	4a	33	10	1859
ILE DE RE						
BALEINES One rev. br. lt., $\frac{1}{2}$ m.	46 14.7 1 33.8	Octagonal tower, 164 ft. high, on N.W. point. Flashes of unequal brilliancy	1b	164	22	1854
HAUT-BANC DU NORD One fixed bright lt.	46 15.8 1 35.3	Circular tower, 96 ft. high, on the shoal, $\frac{1}{2}$ mile north-westward of Baleines Point	3a	72	15	1854
Mer du Fief One green, one br. lt.	46 14. 1 29.	At W. side of entr. Upper lt. green; lower lt. br., E. $\frac{1}{2}$ S., 370 yds. from upper lt. In line, lead into Mer du Fief.	.. ..	36 28	5 5	........
St. Martin Port One fixed red light	46 12.4 1 21.9	On angle of demi-bastion, East of entrance. Shown seaward from S. by E. to N.W. by W. true	4a	52	6	1867
Port de la Flotte One fixed bright lt.	46 11.3 1 19.4	Circular turret, 28 ft. high, on the new mole. Lifeboat station	4a	30	9	1849
Chauveau Point One fixed bright lt.	46 8. 1 16.5	Circular tower, 75 ft. high, on S.E. point of island. Red sector over all rocks on South side of island	3a	59	14	1842

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Rochelle Harbour One br., one <i>red</i> fix. lt.	46 9.4 1 9.3	Upper br. lt. on tower, 72 ft. high, on E. quay; lower lt. red, on circular turret, 44 ft. high, 257 yds. to W. $\frac{1}{2}$ S. In one, they lead in ... Fog-bell on Richelieu embankment	5a ●	59 46	10 9	1852 1862
Ile d'Aix One fixed bright light	46 0.6 1 10.3	Tower, 43 ft. high, on fort at S. point of island	4a	66	10	....
Fouras One fixed bright light	45 59.8 1 6.	Basque Road. Iron pillar on end of pier, N. harbour .....	..	21	7	1876
Charente River 1. One <i>red</i> , one <i>green</i> fixed light 2. Two <i>red</i> fixed lights	45 58. 1 4.4	1. Red & green lts. in one, S.E., 756 yds. apart, shown only toward the Rade d'Ile d'Aix ... 2. White towers, 336 yds. apart; lts. vis. toward the Port des Barques, from S. by E. $\frac{1}{2}$ E. to S.E. by S. In one, lead to anchorage	a ● ●	45 25 44	10 .. 9	1869 1869
Sudre River One fixed bright light	45 47.8 1 8.7	From lantern on Pointe de Mus de Loup, entr. of river. Vis. betw. S.E. $\frac{1}{2}$ S. & N.N.W. $\frac{1}{2}$ W.	..	22	8	1876
ILE D'OLERON One fixed bright light	46 2.8 1 24.7	Chassiron Tower, 141 ft. high, on N.W. point of island. A refuge beacon on Antioch Rock, at $\frac{1}{2}$ mile to N.E.	1a	164	18	1836
La Pérotine	45 53.2	One fixed bright light at end of jetty	●	38	4	1859
Chateau Port Two fixed bright lts.	45 53.1 1 11.7	One on citadel wall; the other 262 yards to N.E. $\frac{1}{2}$ N. When in one, lead in	4a ..	33 77	8 ..	1862
RIVER GIRONDE						
CORDOUAN One rev. br. lt., 1 m.	45 35.2 1 10.5	A handsome structure, 207 ft. high, on rock. Lt. red between N. by E. $\frac{1}{2}$ E. to E. by S. ...	1b	194	27	1727 1854
COUBRE POINT One fixed bright lt.	45 41.5 1 15.4	White tower, 100 ft. high, on N. point of river, N. point of entrance	3a	121	15	1860
Gironde River Lt.-Ves. Two bright fixed lts.	45 39.9 1 15.8	Inside Grand Banc, in 8 fathoms, S.E. of La Mauvaise Shoal	● ..	34 23	10 ..	1870
Pte. de la Palmyre One alternating <i>red</i> & <i>green</i> lt., 20 secs.	45 40.9 1 8.6	On a tripod, 89 ft. high, on the dunes, $\frac{1}{2}$ miles S.E. by E. $\frac{1}{2}$ E. from Pte. de la Coubre lt. ...	..	167	14	1870
Terre Negre One <i>green</i> light	45 38.8 1 6.5	Circular tower, 76 ft. high; not visible sea- ward, or to S. of W.S.W. and E.S.E.	3a	121	12	1866
Royan Two fixed <i>red</i> lights Bright jetty light	45 37.3 1 2.8	One on black tower, at Chay, W. of Royan; the other, painted in red and white bands, at St. Pierre, to the N. of Royan. In one, bearing N.E. by E. $\frac{1}{2}$ E., lead into the river. Lts. only shown in that bearing .....	.. ..	88 177	10 12	1873 1873
St. George Two fixed <i>red</i> lights	45 36. 1 0.6	One on Vallière Point; one on Susse sand- hills, at 2,734 yards E.S.E. $\frac{1}{2}$ E., true, from former; on E. bank of river	3a 3a	46 121	14 18	1860 1870
St. Nicolas One fixed <i>green</i> light	45 33.7 1 5.	On the Dunes, W. $\frac{1}{2}$ S. from Pte. de Grave lt. Shown only to W. $\frac{1}{2}$ S. In one with Pte. de Grave lt. leads through S. channel .....	..	71	7	1873
Pte. De Grave One flash. lt., 5 secs.	45 34.2 1 4.1	Square tower, 82 ft. high, on S. point of entrance	3a	85	14	1828 1866
Tallais Bank Lt.-Ves. One fixed bright lt.	45 30.7 0 59.2	In $2\frac{1}{2}$ fathoms, on N.W. side of bank. Fog- bell 5 strokes ev. half hour	●	35	9	1845
Richard One fixed <i>red</i> light	45 26.4 0 56.	Circular turret, 53 ft. high, on S.W. side of river	3a	105	14	1845
Tour de By Lightvessel One fixed bright lt.	45 27.7 0 45.3	In $2\frac{1}{2}$ fathoms, on W. bank of river, opposite the tower	●	33	10	1860
Mapon Lightvessel One fixed bright lt.	45 17.6 0 45.9	In $3\frac{1}{2}$ fathoms, on W. bank of river	●	33	10	1860
Lazaret	.....	One bright fixed light .....	..	23	5	1860

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
RIVER GIRONDE—(continued).						
Gaet Fixed bright & red lt.	45 12.2 ° 44.9	White iron beacon, 20 ft. high. The light is red to eastward	4a	20	6	1858
Ile de Patiras One bright flashing lt.	45 12.4 ° 42.	Wooden scaffold, 43 ft. high, on N. end. Lt. flashes every 4 seconds.....	•	43	12	1860
Trompeloup	.....	Fixed light, on old chapel, on W. bank .....	..	..	..	1860
Fauillac 1. One br. fixed lt. 2. One br. or red fix. lt.	45 11.9 ° 44.8	1. On landing-place, 2. E. of Mousset, and N. of Gaet; red toward Gaet .....	..	..	..	....
St. Lambert One red fixed light	45 11.3 ° 44.2	Tower, 39 ft. high .....	..	52	8	....
Blaye One red, one br. lt.	45 7.4 ° 40.1	Red lt. at entrance of harbour. Bright lt. at landing-place. Yellow lt. at end of discharging-place .....	..	..	..	....
MOURTINS Two fixed bright lights	45 8.3 ° 9.9	Square towers, each 77 ft. high, S. & W., 356 ft. apart, parallel with the coast	1a	177	20	1863
ARCACHON BASIN One fixed bright light	44 38.7 ° 15.1	Circular brick tower, 156 ft. high, on Ferret Cape, N. side of entrance. Lifeboat station	1a	167	18	1840
CONTIS One br. rev. lt., $\frac{1}{2}$ min.	44 5.7 ° 19.4	Round tower, 125 ft. high, on sand hills, midway between Arcachon and Adour River ...	1b	164	20	1863
Port Cap Breton One fixed red light	43 39.3 ° 27.	On a wall on left bank of entrance .....	..	26	5	1872
Adour River One fixed bright light Two green leading lts.	43 31.8 ° 31.4	On signal tower, 45 ft. high, on S. jetty. Lt. is bright when entrance is practicable, but red when caution is necessary. Two green leading lts. when vessels can enter	4a	33	6	1860
BIARRITZ One alternating lt., 20 s.	43 29.6 ° 33.3	Brick tower, 144 ft. high, on Point St. Martin. Lt. white and red alternately. Flag when practicable. Lifeboat station	1b	240	22	1861
Socoa Port One fixed bright light	43 23.7 ° 41.1	Square tower, 33 ft. high, on W. point of St. Jean de Luz Bay. A red ray of $17\frac{1}{2}^{\circ}$ shown to turning point of the two green leading lts. Lifeboat station	4a	115	10	1845
St. Jean de Luz Two fixed green lights	43 23.6 ° 40.3	One green lt. on stone tower, 46 ft. high, 491 yds. behind E. jetty; lt. shown 10° on each side of leading mark; a second green lt. on E. jetty. In one, lead up till Socoa red lt. appears.....	..	52	7	1872
Two fixed red lights	43 24. ° 40.	Brick towers on Pointe St. Barbe, E. side of bay. In line, S.E. by E. $\frac{1}{2}$ E., 411 yds. apart, lead into the bay, until the green lts. come in line	• •	166 95	13 13	1874

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
Cape Higüera One temporary fix. lt.	43 23.8 1 47.9	Lt. is temporarily exhibited on ruin of old lt.- ho., W. side of Bidassoa R. Shown seaward betw. W. by N. & N. and E. by S. & S. Not shown from May 1 to Nov. 1	..	259	6	1855 1878
Pasages Port One fixed bright light	43 20.2 1 56.5	On Cape La Plata, near W. entrance	4a	486	14	1855
SAN SEBASTIAN One fixed and flash lt. One fixed bright light	43 19.5 2 0.4	White tower, 46 ft. high, on Mount Igueldo, W. side. Flash every 3 minutes On summit of Santa Clara Island	3d 6a	431 171	15 9	1855 1864
Guetaria One fixed bright lt. (?)	43 19.1 2 13.1	Light blue tower, on N. hill of San Antonio Islet. Visible seaward from N.W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ E. (Doubtful light)	5a	295	10	1863
Sumaya One bright fixed lt. (?)	43 18.7 2 15.5	Triangular yellow tower, 60 ft. high, on Mount Atalaya. (Doubtful light)	5a	135	..	1870
Lequeitio One bright fixed light	43 23.4 2 33.5	Tower, 43 ft. high, on Point Sta. Catalina	5a	148	10	1862
MACHIGHACO CAPE One fixed and flash. lt.	43 27.3 2 49.4	Circular tower, 28 ft. high, on extremity of cape. Flash every 4 minutes	1d	260	18	1852
Bilbao One fixed bright light	43 22.6 3 4	Tower, 41 ft. high, on fort, on Point Galea, W. side of entrance. Also a lt. when vessels enter, on S.W. mole head	4a	380	16	1852
Castro Urdiales One fixed and flash. lt.	43 24.3 3 16.1	On Sta. Ana Castle. Bright lt., with red flash every 3 minutes	5d	131	7	1858
Santona 1. One fixed & flash. lt. 2. One fixed red light	43 28.2 3 27.2	1. Tower, 44 ft. high, on Pescador Point. Flash every 3 minutes. 2. Tower on Caballo Point, E. part of mount. Shown from N. by E. to S. by W. $\frac{1}{2}$ W.	4c ..	126 85	12 10	1863 1863
Santander 1. One bright fixed lt. 2. One red fixed light 3. One fixed green lt.	43 28.2 3 45.4	1. White tower, 61 ft. high, on Mouro Island. Shown seaward from N. by E. to E. by S. 2. Red lt. on Capitania. 3. Brick tower, 45 ft. high, on Point Puerto, W. of entrance. Lt. is bright over Horadada Islet	5a ● 5a	141 33 79	12 3 4	1860 1863 1870
CAPE MAYOR One rev. br. lt., ev. m.	43 29.5 3 47.6	Tower, 101 ft. high, on the cape, $\frac{1}{2}$ mile from entrance of Santander. A blue flag shown when tug cannot put off	2b	298	20	1839
Suances One fixed bright light	43 26.8 4 0.9	At W. side of entrance to River San Martin de la Arena	6a	118	10	1863
San Vicente de la Barquera One fixed red light	43 23.5 4 25.8	White stone tower on Point de la Silla, at entrance of harbour	6a	142	9	1871
Comillas	.....	Two towers for fixed lts. building on the cliffs	..	..	..	....
TINA MAYOR One bright fixed light	43 25.2 4 33.6	White tower, 33 ft. high, on Point San Emete- rio, $\frac{1}{2}$ mile W. of entrance	3a	223	15	1864
Llanes River One fixed bright light	43 26.7 4 45.5	Tower, 36 ft. high, on Point San Antonio, S. side of entrance	6a	64	9	1861
Rivadésella One fixed & flashing lt.	43 31. 5 7.1	Tower, 25 ft. high, on Mount Somos. Lt. fixed, with flash every 4 minutes	3c	370	17	1861
Villaviciosa One fixed bright light	43 35.2 5 22.9	Yellow tower, 36 ft. high, on Tascones Point, W. side of entrance		220	7	1864

Name and Character of Light.	Lat. N. Long. W. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Gijón 1. One fixed light 2. One fixed <i>red</i> light	43 35.2 5 38.	1. Tower, 30 ft. high, near Sta. Catalina Hermitage 2. At end of new mole; also a red lt at N. mole of basin	4a 4a	167 29	10 7	1865 1866
PENAS CAPE One rev. br. lt., $\frac{1}{2}$ min.	43 42.3 5 49.8	Tower, 33 ft. high, on the cape.....	1b	338	21	1853
Aviles One fixed bright light	43 38.1 5 56.4	Yellow tower, 49 ft. high, on Castillo Point, N. side of entrance	6a	130	10	1863
Cudillero One fixed bright light	43 36.2 6 9.1	Tower, 25 ft. high, on Revallera Point	6a	94	10	1858
CAPE BUSTO One fixed & flashing lt.	43 36.2 6 28.8	Tower, 34 ft. high, on the extremity of the cape. Lt. bright, with red flash every 2 min.	3d	307	12	1858
Luarca One fixed light	43 34.5 6 32.9	Square tower, 30 ft. high, on Point La Blanca, or Atalaya, on E. side	6a	177	7	1862
ORRIO DE TAPIA ID. One fixed & flashing lt.	43 35.7 6 58.4	Octagonal tower, 32 ft. high, on the summit of the islet. Flash every 2 minutes.....	3d	93	15	1859
Pancha Island One fixed bright light	43 34.7 7 4.4	On house, on W. point of entrance of Ribadeo and Figueras.....	5a	79	9	1859
San Ciprian Peninsula One bright fixed light	43 13. 7 28.5	On house, on Punta de Atalaya, N. extreme of peninsula.....	6a	121	9	1864
Barquero Harbour One bright fixed light	43 45.6 7 40.3	Tower, 24 ft. high, on Conejera Island, on E. side of entrance	6a	273	12	1864
CAPE ESTACA One rev. br. lt., 1 min.	43 47.3 7 44.3	Granite tower, 35 ft. high, on the cape	1b	307	20	1850
Port Cedeira One fixed bright light	43 39. 8 5.4	On point of Robaleira Peninsula, S.W. of town	6a	88	9	1862
CAPE PRIOR One fixed bright light	43 33.7 8 19.1	On N. point of Cape Palma	3a	448	15	1854
Cape Priorino One fixed and flash. lt.	43 27.8 8 20.6	On Chieo Priorino, entrance to Ferrol. Light bright fixed, with red flash every 2 min.	4d	92	11	1864
Ferrol One <i>red</i> , one bright lt.	43 28.7 8 15.5	Fixed red lt. near La Palma Castle. Bright light on Mercantile Wharf	5a ..	38 23	8 4	1862 1866
CORUNA One fixed and flash. lt.	43 23.3 8 24.1	On tower of Hercules; quadrangular, 159 feet high. Light fixed, with flash every 3 min.	3d	331	16	1847
Coruna	.....	Fixed lt. on St. Antonio Castle. A fixed red lt. on embarkation mole .....	..	..	..	....
SIBARGAS ISLANDS One fixed and flash. lt.	43 21.8 8 50.2	Tower on Isla Mayor, N. peak. Fixed bright light, with red flash every 4 minutes	4d	358	11	1853
Cape Villanos One fixed bright light	43 9.8 9 12.9	At Camarinas, $2\frac{1}{2}$ miles northward of Camarinas Bay. Obscured by cliff from S. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E.	4a	243	10	1854
CAPE FINISTERRE One rev. br. lt., $\frac{1}{2}$ min.	42 52.7 9 15.4	Tower, 56 ft. high, on S. point of the cape. Obscured by land N. of N. $\frac{1}{2}$ W.	1b	468	20	1853

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Cape Ce One red fixed light	42 54.8 9 10.1	Grey tower on cape, W. of Corembion Bay ...	5a	82	8	1860
Monte Leure One bright fixed light	42 44.3 9 3.8	On Point Quejál, N. entrance of Muros Bay	5a	89	10	1862
CAPE CORROBEDO One fixed bright light	42 34.6 9 4.8	Tower, 41 ft. high, on the cape.....	3a	103	12	1853
Salvora Island One fixed and flash. lt.	42 27.8 9 0.4	South point. Lt. bright, with red flash every 2 minutes	4d	82	10	1853
Rua Island One bright fixed light	42 32.8 8 55.4	Grey tower, 52 ft. high, on island.....	5a	78	11	1869
Arosa Island One fixed bright light	42 34.1 8 52.	On the N.W., or Caballe Point	4a	36	10	1851
Ons Island One fixed and flash. lt.	42 22.5 8 55.1	Tower, 35 ft. high, on the summit of the island in Pontevedra Bay. Flash every 2 min. ...	5a	421	12	1865
RAYONA or OIES IDS. One rev. br. lt., $\frac{1}{2}$ min.	42 12.4 8 54.1	Tower, 35 ft. high, on Mount Faro, Middle Island	2b	604	20	1853
Vigo One fixed & flash. lt.	42 15.3 8 41.	On castle of La Guía, $1\frac{1}{2}$ mile N.E. of Vigo. Flash every 3 minutes	4d	102	10	1844
Guardia Port	.....	Light proposed .....	..	..	..	....
Boeiro Island	.....	Light proposed .....	..	..	..	....
CAPE SILLEIRO One fixed bright light	42 6.1 8 52.6	Granite tower, 34 ft. high, on extremity of S. point of Vigo Bay.....	4a	72	17	1862

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
PORTUGAL.						
Lima River	41 41.3	From Fort Vianna, N. bastion, N. side of river	a	48	7	1878
One fixed <i>red</i> light	8 44.	entrance				
Esposende River	41 31.4	Iron column on platform of old fort	a	..	7	1866
One <i>red</i> fixed light	8 40.5					
Povoa de Varzim	41 24.	Fishing lts., 15 miles N. of Oporto .....	..	..	..	1857
	8 37.					
Oporto	41 9.1	Square tower, white with red band, at Nossa	4b	170	15	1834
One rev. br. lt., 1 min.	8 37.2	Senhora da Luz. Tide signals				
Aveiro	40 39.	Proposed; on the pier, S. side .....	..	..	..	....
<i>Proposed light</i>	8 43.					
CAPE MONDEGO	40 12.	A circular tower on the S. extremity of the	●	330	20	1837
One fixed bright light	8 55.2	cape; shown westward from N. to S.				
BERLENGAS	39 25.	Square tower, 100 ft. high, on Great Berlenga	●	365	25	1848
One rev. br. lt., 3 min.	9 31.3	Island				
CAPE CARVOEIRO	39 21.1	Square tower, 94 ft. high, on highest part.....	●	182	15	1790
One fixed bright light	9 24.3					
CAPE ROCA	38 46.1	Round tower, 52 ft. high, $\frac{1}{4}$ mile N.E. of the	●	598	21	1722
One rev. br. lt., $1\frac{1}{2}$ min.	9 30.	cape				
RIVER TAGUS						
Guia	38 41.	Hexagonal tower, 96 ft. high, at Nossa Sen-	4a	167	12	1771
One fixed bright lt.	9 27.2	hora da Guia. Signals.....				
Cascaes	38 41.	Square tower, with blue band, on S.E. angle	a	52	5	1868
One <i>red</i> fixed light	9 26.	of Sta. Marta Fort.....				
San Julian	38 40.3	Hexagonal tower, 120 ft. high, in the fort.....	4a	128	13	1775
One fixed bright lt.	9 20.5					1848
BUGIO	38 39.	Tower of Lorenzo, 70 ft. high. Reported to	●	110	16	1775
One rev. br. lt., $1\frac{1}{2}$ m.	9 18.6	revolve every $3\frac{1}{2}$ minutes (1876).....				
Caxias	38 41.9	At $2\frac{1}{2}$ miles W. of Belem Castle. In line, N.E.	..	240	18	1878
Two fixed <i>red</i> leading	9 13.8	by E. $\frac{1}{2}$ E., lead over bar until Bugi. lt. bears	..	60	10	....
lights		S., when steer in mid-channel E. by S. to a				
Belem	38 40.8	position 4 cables S. of Belem Castle.....	●	30	6	1847
One fixed <i>red</i> light	9 17.9	In fort, near Belem Castle				
CAPE ESPICHEL	38 24.1	Square tower, 100 ft. high, on the cape	1a	627	25	1790
One fixed bright light	9 13.					1848
Setuval, or St. Ubes	38 31.1	Circular tower, 36 ft. high, on Fort d'Outao,	●	490	16	1775
One fixed bright light	8 53.	at W. entrance of harbour				
CAPE ST. VINCENT	37 3.	Circular tower, 52 ft. high, on the Convent,	●	220	20	1846
One rev. br. lt., 2 min.	9 0.	Cape San Vicente. Rep. ev. $1\frac{1}{2}$ min. Lt.				
CAPE SANTA MARIA	36 56.2	observed by high land to the eastward	●	109	15	1850
One fixed bright light	7 55.	Circular tower on the cape				

Name and Character of Light.	Lat. N. Long. W. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GUADIANA RIVER Two red fixed lights	37 11.4 7 24.3	On W. end of Canela Island; on E. side of Ayamonte River. In one, they lead over the bar .....	..	22½ 21	8 ..	1861
Cristina Island Two green lights	37 11.1 7 20.5	On the point S. of the town. In one, they lead over the bar .....	..	26 16	7 ..	1861
Las Piedras River One fixed & flash. lt.	37 11.8 7 1.1	White tower, 36 ft. high, at Rompido de Cartaya, at entrance of river. Fixed light, with flash every 4 minutes	3c	79	14	1861
Cartaya Bar Two bright fixed lts.	.....	On white beacons, 323 yds. apart. In one, they lead across the bar .....	..	18 13	....	........
Odiel River Two fixed bright lights	37 13.4 6 51.6	On Punta del Padre Santo, on E. shore, 1½ mile within the bar of river leading to Huelva. In line, they lead in best channel	●	27 16	8 ..	1861
GUADALQUIVIR RIVER						
CHIPIONA One br. rev. lt., 1 m.	36 44. 6 26.8	Yellowish-white tower, 205 ft. high, on the Cerro del Perro. The Salmadina Shoal lies 1½ mile W. by N. of it	1b	225	23	1855
Espirita Santo One fixed red light	.....	S. of the fort. La Riza Spit extends 1 mile N.N.E. of it. Not shown seaward .....	..	..	..	1854
Malandar Point One fixed bright lt.	36 47.6 6 21.9	Tower, 30 ft. high, on the low point, opposite San Lucar de Barrameda .....	..	36	6	1854
Bonanza	.....	Fixed bright light, near the quay	5a	52	7	1854
CADIZ One fixed lt., with flash.	36 31.5 6 19.4	White tower of San Sebastian, 127 ft. high, on W. end of Cadiz. Bright lt., with red flash every 2 minutes	2b	146	20	1855
CAPE TRAFALGAR One rev. lt., ¼ min.	36 10.9 6 1.3	Tower, 116 ft. high, on extreme of the cape, at 1½ mile S.W. by W. true from the tower on Altos de Mega	2a	168	19	1862
TARIFA One fixed red lt.	35 59.9 5 36.6	Circular tower, 112 ft. high, on S. end of peninsula. Shaded ¼ mile S. of Pearl Rock.	1a	132	20	1813 1870
Carnero Point One fixed green light	36 4.5 5 25.8	Round yellow tower, 163 ft. high. Lt. shows to S. and E. betw. N. ½ E. & S.W. by W. ½ W.	5a	135	11	1874
Algeciras One fixed bright light	36 7.3 5 26.1	White tower, 29 ft. high, on mole end of Verde Island, on fort. Shown over entrance of bay, from S.E. by E. ¼ E. to S. by W.	6a	62	9	1850 1864
GIBRALTAR						
EUROPA POINT One fixed bright lt.	36 6.5 5 21.	On Victoria Tower, 61 feet high. A sector of red light over the Pearl Rock, from S.W. by W. ½ W. to W. ½ S.	1a	156	15	1840 1866
New Mole	36 7.3	Stone column, 32 ft. high, near end. Red lt. temporary	4a	28	8	1867
Ragged Staff Landing-place	.....	One green gas light .....	..	..	..	....
North or Old Mole Head	.....	Fixed red light .....	..	..	..	1840
MAROCCO.						
CAPE SPARTEL One fixed bright light	35 47.2 5 55.7	Stone tower, 70 ft. high, ¼ mile E. of the cape, at S.W. of entrance to Gibraltar Straits	1a	312	20	1864
CEUTA One rev. bright light	35 53.7 5 17.3	Tower, 88 ft. high, on Mosqueros Hill, Almina Point. Flash every minute or 1½ min.	1b	587	23	1855

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
EUROPA POINT One fixed bright light	36 6.5 5 21.	On Victoria Tower, 61 ft. high. Red ray shown over Pearl Rock, from S.W. by W. $\frac{3}{4}$ W. to W. $\frac{1}{4}$ S.	1a	156	15	1840 1866
Estepona (One fixed and flash. lt.)	36 24.3 5 9.6	On Donocella Point. Flash every 4 minutes ...	4c	59	12	1863
Marbella 1. One fixed bright lt. 2. One fixed red light	36 31. 4 54.3	1. Grey tower, 39 ft. high, W. of town 2. On extremity of new iron mole	6a ..	55 30	12 8	1864 1872
Calaburra Point One fixed and flash. lt.	36 30.7 4 38.	Grey tower, 44 ft. high, S. of the town. Flash every 3 minutes	3c	115	16	1863
MALAGA One fixed and flash. lt.	36 42.6 4 25.1	White tower, 105 ft. high, near E. mole head. Red flash every 2 minutes	3d	125	15	1863
Veles-Malaga One fixed bright light	36 44. 4 9.3	Grey tower, 36 ft. high, E. side of entrance to river	5a	41	11	1864
Nerga <i>Building</i>	36 45. 3 55.	Tower, 77 ft. high, building	3a	94	..	....
Torrox One bright fixed light	36 45.2 3 59.4	Grey stone tower, 77 ft. high, on castle ruins	3a	93	15	1864
CAPE SACRATIF One rev. br. lt., 1 min.	36 41. 3 28.9	Red brick tower, 56 ft. high, on a hill at the extremity of the cape	2b	320	24	1863
Honda Cove One fixed red light	36 41. 3 25.9	Tower, 34 ft. high, on Pla. del Llano de Carchuna, on W. point of entrance	5a	44	8	1863
ALBORAN ISLAND One fixed bright light	33 58. 3 1.	Yellow tower, 62 ft. high, rising from centre of keeper's dwelling.....	..	115	15	1876
Adra Point <i>Building</i>	36 44. 3 2.1	Building	6a	..	..	....
SABINAL POINT One fixed and flash. lt.	36 41.2 2 44.	White tower, 102 ft. high. Flash every 2 min.	3c	105	18	1863
Roquetas One fixed bright light	36 45.2 2 41.8	White tower, 36 ft. high, S. of town	6a	57	11	1863
Almeria One fixed bright light	36 50.7 2 33.3	On extreme of mole. Shown from river mouth to S. Telmo Fort.....	6a	26	9	1865
CABO DE GATA One br. rev. lt., $\frac{1}{2}$ min.	36 43.6 2 14.2	White tower, 60 ft. high, on Corraletes Castle	2b	194	19	1863
MESA DE BOLDAN One fixed and flash. lt.	36 54.7 1 58.3	White tower, 39 ft. high, on the mount. Flash every 2 minutes	3c	725	22	1863
Villaricos One fixed bright light	37 11.3 1 52.8	White tower, 30 ft. high, $\frac{1}{2}$ mile N. of the River Almanzora	5a	63	9	1842
Puerto de Aguilas One fixed bright light	37 23.5 1 39.4	On Punta Negra, W. part of Mount Aguilas	6a	48	5	1860
Puerto de Masarron One fixed bright light	37 33.2 1 17.3	Grey tower, 23 ft. high, on a small hill S. of the port.....	6a	200	7	1862
TINOSO CAPE One fixed bright light	37 31.3 1 8.9	Red round tower, 34 ft. high, on square build- ing on the cape	1a	479	20	1859

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Cartagena 1. One fixed bright lt. 2. One fixed <i>red</i> light 3. One fixed <i>red</i> light	37 35.7 ° 58.4	1. In battery, on Point Podadera..... 2. On summit of Escambrera Id., at entrance 3. On wooden frame, 33 yards from end of breakwater, at W. side of entrance. In bad weather, moved back 131 yards	4a 6a	200 223	12 6	1856 1864
Puerto de Porman One fixed bright light	37 34.2 ° 49.5	Yellow tower, 27 ft. high, on hill over Chapa Point, S.E. extreme of entrance	5a	162	9	1865
CAPE PALOS One bright revolving lt.	37 37.5 ° 39.9	Grey tower, 165 ft. high. Light revolves every minute	1b	263	21	1865
Hormiga Grande One fixed bright light	37 38.5 ° 38.1	White tower, 41 ft. high, on largest islet, 2½ miles N.E. by N. true from Cape Palos	5a	75	12	1862
Estacio One <i>red</i> fixed light	37 45. ° 42.6	On beach La Manga, at 7½ miles N. by W. from Hormiga Grande	6a	62	6	1862
Torrevisja One fixed <i>red</i> light	37 58.1 ° 39.9	On fort, on Pta. Cornuda, near Cervera. Will be moved as the mole advances.....	..	33	4	1862
PLANA, or TABARCA ISLAND One fixed and flash, lt.	38 10.2 ° 26.6	White tower, 40 ft. high, at ½ mile from East point of island. Br. flash every 2 min.	3d	90	15	1854
Santa Pola Two fixed bright lights	38 12.5 ° 30.1	One on Talayola Tower, 47 ft. high, ¼ mile from sea, and the other from an iron column on the mole in Sta. Pola Bay	6a ..	499 16	7 ..	1858 1878
Alicante One <i>red</i> , one <i>green</i> light	38 20.3 ° 28.7	Red lt. on rocks off N. mole head. Green lt. on end of W. mole.....	..	26	2	1855
Huertas Cape One fixed bright light	38 21. ° 22.6	Tower, 27 ft. high, on house on the cape	4a	123	12	1856
Villa-joyosa One fixed bright light	38 30. ° 11.6	White building, 40 ft. high. Shown all round, on the mole	6a	52	10	1859
Altea One fixed bright light	38 33.5 ° 3.9	Round white tower, 26 ft. high, on Albir Point	5a	367	9	1863
CAPE SAN ANTONIO One rev. br. lt., ½ min.	38 48.5 Long. E. ° 12.	A white tower, 52 ft. high	2b	571	25	1861
Denia <i>Proposed</i>	38 51.5 ° 7.5	Light proposed .....	..	..	..	....
CULLERA CAPE One fixed bright light	39 12.3 Long. W. ° 13.5	Circular tower, 44 ft. high, on the cape. Shown seaward from S. to N.N.W.....	3a	92	15	1858
Grao de Valencia One fixed <i>red</i> light	39 26.8 ° 19.1	At extremity of new mole (constructing)	6a	28	9	1866
El Cabanal One fixed bright light	39 28.1 ° 19.7	On S. tower of Hermitage, 54 ft. high	6a	66	9	1862
Burriana One fixed <i>red</i> light	39 53.3 ° 3.8	At the Grao, near the mouth of the River Seco	6a	26	9	1867
Castellon de la Plana One bright fixed light	39 58.7 ° 0.2	At the Grao, in the Gulf of Valencia	6a	26	9	1867

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Mile.	Year established.
OROPESA CAPE One fixed and flash. lt.	40 4.9 0 9.	White tower, 41 ft. high, on the cape. Flash every 3 minutes	3d	73	16	1857
Vinaros One red fixed light	40 29.3 0 28.2	On an iron frame, on La Galera Rock.....	6a	26	6	1862
COLUMBRETES ROCKS One fixed bright light	39 54. 0 44.4	Square white building, 69 ft. high, on N.E. part of Monte Colibre	1a	190	21	1859

BALEARIC ISLANDS.

FORMENTERA ISLAND One fixed bright light	38 38.2 1 39.4	White tower, 70 ft. high, on Codolar, or S.E. point	2a	580	18	1861
IVIZA ISLAND						
CONEIERA ISLAND One rev. br. lt., 1 m.	38 59.8 1 16.5	White tower, 54 ft. high, on Cape Blanco. Lt. shown from N.E. by E. $\frac{1}{2}$ E. to S.S.W. $\frac{1}{2}$ W.	2b	289	20	1857
Point Grossa One intermitting lt.	39 5. 1 36.9	Grey tower, 50 ft. high, on N.E. point of Iviza; eclipsed every 4 minutes	3a	180	15	1870
Ahorcados Island One fixed bright lt.	38 48.7 1 28.8	Tower, 56 ft. high, on S. extreme of Iviza ...	4a	92	16	1861
Puercos Islet One fixed & flash. lt.	38 48. 1 29.4	Grey tower, 84 ft. high, on N.W. part of Es- palmador, S. of Ahorcados; red flash every 8 minutes	4c	94	15	1864
Botafoch Island One fixed bright lt.	38 54. 1 31.	Red tower, 53 ft. high, on islet, N. side of entrance to port	6a	102	9	1861
DRAGONERA ISLET One fixed and flash. lt.	39 35. 2 21.2	On the central peak (Single de Ginavera) of the islet, at W. end of Majorca. Flash every 2 minutes, which may be seen sometimes at 36 or 40 miles off ...	3c	1191	18	1852
MAJORCA ISLAND						
Cala Figuera One fixed bright lt.	39 27.7 2 33.9	Yellow tower, 45 ft. high, on the cape, W. side of entrance to Palma Bay	5a	116	12	1860
Port Pi One rev. br. lt., 2 m.	39 33. 2 40.4	White tower, 100 feet high, on S. side of entrance to Palma Bay.....	..	132	8	....
Palma Port One fixed red light	39 34. 2 40.9	On the end of the mole.....	●	37	4	....
Cape Blanco One fixed bright lt.	39 22. 2 49.9	Square tower, 38 ft. high, on S.W. coast	6a	294	10	1863
Salinas Point One fixed bright lt.	39 16.5 3 5.9	Grey tower, 33 ft. high, on S. point of Majorca	6a	50	10	1863
CABRERA ISLAND One intermitting lt.	39 6.8 2 58.2	Square yellow tower, 81 ft. high, on Anciola or S.W. point of island, off Cape Salinas. Lt. bright $\frac{1}{2}$ min., eclipsed $\frac{1}{2}$ min.....	2b	404	20	1870
Puerto Colom One fixed bright lt.	39 25. 3 18.4	On N.E. point of entrance; on S.E. coast of Majorca.....	6a	46	10	1863

Name and Character of Light.	Lat. N. Long. E. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
MAJORCA—(continued).						
CAPE PERA One fixed & flash. lt.	39 43. 3 30.	Grey tower, 55 ft. high, on E. point of Majorca. Fixed, with red flash every 2 minutes.....	3c	241	18	1861
CAPE FORMENTON One rev. br. lt., $\frac{1}{2}$ m.	39 57.6 3 14.9	Grey tower, 70 ft. high, on N. point of Majorca	2a	592	20	1863
Aucanada One fixed bright lt.	39 49.8 3 12.4	White tower, 46 ft. high, on the summit of the islet in Alcudia Bay	6a	77	9	1861
SOLLER PORT 1. One fixed br. lt. 2. One fixed br. lt.	39 48.1 2 43.6	1. White tower, 62 ft. high, with red band, on Grosa Point, W. entrance 2. Grey tower, 40 ft. high, on Cruz or E. point	4a 6a	467 77	15 12	1858 1864
MINORCA ISLAND						
Ciudadela One fixed bright lt.	39 59.8 3 52.2	Grey tower, 36 ft. high, on Pta. Enderrocat, at W. end of Minorca	6a	66	7	1868
CABALLERIA CAPE One fixed bright lt.	40 5.7 4 9.2	White tower, 47 ft. high, on N. cape of Mi- norca	2a	308	18	1857
Port Mahon One fixed bright lt.	39 52. 4 24.2	On ruins of Fort San Felipe, on the S.E. side of the entrance	6a	74	7	1852
AYRE ISLAND One rev. br. lt., 1 m.	39 47.6 4 22.9	Yellow tower, 118 feet high, on S.E. part	2b	171	20	1860
DAETUCH One fixed & flash. lt.	39 54.8 3 52.1	White tower, 50 ft. high, on S.W. point of Minorca. Flash every 3 minutes.....	4d	70	16	1859
ERRO RIVER						
Port Alfaques One fixed red light	40 36.7 0 34.7	On Senieta Point, $\frac{1}{2}$ of a mile S. of S. Carlos de la Rapita	6a	30	6	1864
Bana Point One fixed bright lt.	40 34.5 0 39.1	Yellow iron tower, 61 ft. high, on the S. ex- treme of the Alfaques de Tortosa	3a	62	13	1864
CAPE TORTOSA One br. rev. lt., 1 m.	40 43.4 0 57.	Iron tower, 169 ft. high, on E. end of Buda Island. Must have a berth of 1 mile	2b	174	20	1864
Port Fangal One fixed bright lt.	40 47. 0 47.2	On Fango Point, N. point of the Alfaques.....	6a	25	9	1864
CAPE SALOU One fixed and flash. lt.	41 4.1 1 9.6	White tower, 33 ft. high, near the cape; flash every 4 minutes	3d	140	15	1828
Salou 1. One fix. bright lt. 2. One fixed green lt.	41 4.8 1 6.6	1. On S. mole (temporary); not lighted about the full moon; to be revolving light .....	..	27	6	1827
Tarragona 1. One fixed red light 2. One fixed green light	41 7. 1 16.	2. On extr. of W. or inner mole, constructing 1. On S. end of the mole (temporary); shifted as the works advance .....	.. a	54 16	10 3	1832 1878
Villanueva and Geltru One bright fixed light	41 14. 1 43.7	On San Cristobal Point, W. by N. $\frac{1}{2}$ N. true from Pta. Grossa	6a	40	11	1866

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LLOBREGAT RIVER One rev. br. lt., $\frac{1}{2}$ min.	41 19.2 2 8.9	Tower, 102 ft. high, painted yellow with white bands, on an old fortress on N. side of entr.	2b	107	18	1852
BARCELONA One fixed and flash. lt. One red, one green lt.	41 22.2 2 10.9	Octagonal tower, 37 ft. high, on old mole head. Bright lt., with red flash every 4 min. Red lt. on W. mole head, green lt. on E. mole...	4d ●	43 33	9 4	1859 1866
CALELLA One fixed and flash. lt.	41 36.7 2 39.4	On the height of Torreta. Flash every 2 min. Also a small lt. on jetty in construction.....	3d	166	18	1859
Palamos 1. One bright fixed lt. 2. One fixed red light	41 50.1 3 8.5	1. On the mole head 2. On Molino Point, E. side of entrance to bay	● 5a	33 74	8 10	1865 1865
CAPE SAN SEBASTIAN One rev. br. lt., 1 min.	41 53.5 3 12.4	White tower, 38 ft. high, near the Hermitage	1b	548	22	1857
ROSAS One fixed and flash. lt.	42 14.7 3 10.9	White tower, 37 ft. high, with red bands, on Ponceillas Point, E. side of bay. Red flash every 2 minutes	4c	78	12	1864
ISLAS MEDAS One bright fixed light	42 2.9 3 13.3	Reddish tower, 35 ft. high, on summit of the island, at S. extreme of Gulf of Rosas.....	3a	283	15	1868
Cadaques One bright fixed light	42 16.2 3 17.2	On Cala Neus Point, S. side of entrance.....	6a	116	10	1864
GREUX CAPE One fixed & flash. br. lt.	42 18.7 3 19.3	White tower, 35 ft. high, $\frac{1}{2}$ mile in shore (re-pairing). A temporary red lt. is shown.....	3d	235	15	1863

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CAPE BEARN	42 31.	Round stone tower, 30 ft. high, on Mount Bearn, $\frac{1}{2}$ a mile S.S.E. of Port Vendres	1a	751	22	1836
One fixed bright light	3 7.4					
Port Vendres	43 31.3	White brick tower, 59 ft. high, in Fort Fanal, W. side of entrance	4a	98	10	1858
One fixed bright light	3 6.7	On Port Bearn. In one, N.E. $\frac{1}{2}$ N., 217 yards apart, they lead into the port	4a	36	7	1861
One bright, one red lt.	.....		●	67	8	1858
Port Nouvelle	43 0.8	1. On W. jetty head. Port signals. Lifeboat station ...	4a	33	10	1805
1. One fixed bright lt.	3 3.9	2. Temporary lt., on S. mole head, in progress. In line with No. 1 indicates S.Ely. extension of new mole. Not shown in bad weather when red lt. is shown below br. lt. on W. jetty. Entering, leave new mole on port hand				1878
2. One fixed bright lt.						
Agde						
East and West Jetties	43 16.7	Bright lt. on E. jetty; red lt. on W. jetty. Entrance of Hérault River	●	41	10	1827
One br., one red lt.	3 26.9		..	41	7	....
Fort Brescou	43 15.5	Round tower, 29 ft. high, on S.E. bastion, 3 miles S.E. of River Hérault	4a	59	10	....
One fixed bright lt.	3 29.9					
MONT AGDE	43 17.9	Round tower, 46 ft. high, $2\frac{1}{2}$ miles E. $\frac{1}{2}$ N. from River Hérault	1b	413	27	1836
One rev. br. lt. 1 m.	3 30.1					
CETTE						
1. One bright fixed lt.	43 23.8	1. Round tower, 83 ft. high, on St. Louis mole head, W. side of entrance	3a	105	14	1831
2. One red fixed light	3 42.4	2. Red light on N.E. end of breakwater	●	46	7	1831
3. One green fixed light		3. Green light on end of Frontignan Jetty .....	..	44	7	1870
Etang de Thau	43 26.1	Brick lt.-ho., 11 ft. high, on Balaruc Pt., shore of Etang de Thau, $\frac{1}{2}$ 3 miles N.W. of Cette .....	..	25	10	1878
One fixed bright light	3 40.3					
L'ESPIGNETTE POINT	43 29.3	Tower, 60 ft. high. Lt. removed from Aigues Mortes. Flash every 4 minutes	3c	85	14	1869
One bright fix. lt., with flashes	4 8.9					
Grau d'Aigues Mortes	.....	Bright lt. on S. jetty; fixed red lt. on N.W. jetty	4a	23	5	1858
CAMARGUE, or FARAMAN	43 20.7	Circular tower, 120 ft. high, E. side of mouth of Vieux Rhone	1a	125	18	....
One fixed bright light	4 40.8	Lower lt. at base of tower, to distinguish it from Planier Rock light .....	..	38	9	1868
One lower red light						
St. Louis Canal	43 23.4	New brown iron tower, 38 ft. high, on E. end of S. jetty. Lt. obscured over shoals at mouth of the Rhone .....	..	43	10	1872
One fixed bright light	4 52.2					
Bone	43 23.6	Circular tower, 36 ft. high, on mole head, N. side of entrance; the other, a square tower, 84 ft. high, in fort, S. side. A sector of red lt. of 40° from the fort towards the approach to the Rhone River	4a	52	10	1840
Two fixed bright lts.	4 59.1		4a	98	10	1843
Cape Couronne	43 19.5	Stone tower, 38 ft. high, on eastern point of Gulf de Foz .....	..	55	11	1867
One rev. red lt., 20 sec.	5 3.1					
Frioul Port	43 16.7	Near the end of the East jetty .....	..	35	5	1871
One red fixed light	5 18.6					
MARSEILLES						
National Basin	.....	1. From lt.-ves. at N. entr. of Marseilles Harbour, marking works in progress off N. end of N. outer jetty. In all cases vessels must pass northward of the lighthouse	a	39	7	1869
1. Two fixed red lts.		2. Vertically, on N. buoy, marking works in progress, at N.E. angle of National Basin. Entering National Basin from northward, leave these lts. on port hand, and keep on W. side of a line joining them with E. pier lt. of Abattoir Passage, to avoid works in S.E. angle of basin	..	..	..	1877
2. Two fixed red lts.		3. One on either side of entr. to National Basin, and one on either side of Abattoir Passage, which leads from National Basin into Maritime Basin				
3. Small red lights						
Maritime Basin	.....	Buoys and lights will be placed off works in Maritime Dock .....	..	..	..	....
Old Basin	43 17.9	1. At S. entr. of Marseilles Harb. Round tower, 70 ft. high, on iron pillars, on S. pt. of mole	4a	76	8	1855
1. One red light	5 21.4	2. One on either side of the entr. of the basin				
2. Two small red lts.		White turret below Fort St. Jean, on N. side of the entrance to old basin	4a	39	10	1837
Fort St. Jean	43 17.7					
One bright fixed lt.	5 21.6					

Name and Character of Light.	Lat. N. Long. E. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
MARSEILLE—(continued).						
Tete de Mare One fixed & flash. lt.	43 17.7 5 21.4	Fixed lt., with flash every 3 minutes, on S. side of entrance. Hidden to S.E.	4c	62	10	1837
Ile Chateau d'If One bright fixed lt.	43 16.8 5 18.6	On the East point of the island. Lifeboat station	4a	69	10	....
PLANIER ROCK One rev. br. lt., $\frac{1}{4}$ min.	43 11.9 5 13.7	White tower, 118 ft. high, with a small tower near it	1b	131	20	1829
Riou <i>Proposed light</i>	.....	Light proposed at entrance to gulf .....	..	..	..	....
Cassis One fixed bright light	43 12.8 5 31.9	Small tower, 28 ft. high, W. side of entrance	4a	92	10	....
Ciotat One bright, one red lt.	43 10.3 5 36.6	Bright lt. on Bérouard mole head, N. side of entrance; red lt. on new mole head.....	4a 4a	39 52	10 6	.... 1858
Port Bandol One fixed red light	43 7.9 5 45.3	On extremity of the mole .....	..	32	5	1872
Grand Rouveau Les Ambies One fixed bright light	43 4.8 5 46.	Square stone tower, 49 ft. high, on the summit of inlet, S. side of entrance to Bay de St. Nazaire.....	3a	151	14	1863
SEPET CAPE One fixed and flash. lt.	43 4.1 5 56.7	Square tower, 36 ft. high, on Rascais Point. Br. and red flash alternately every 3 min....	3c	194	12	1851
TOULON ROAD 1. One fixed bright lt. 2. Two green lights 3. Two small red lights 4. Two fixed red lts. & one fixed green light	43 6.2 5 55.5	1. On Grosse Tower, 52 ft. high, on N. side of entrance to the Little Road..... 2. From lt.-ves., on S.W. extremity of l'Ane Bank. Lights horizontal, on one mast .. 3. On W. pier of Old Harbour and N. pier of Merchant Port .. 4. From three lt.-vessels marking the extremities of piers in course of construction in Toulon Outer Road. Vessels entering should keep the green light on the starboard hand, and the red lts. on the port hand	4a ●	52	10 3 ..	1859 1861 1878
La Seyne One red or bright light	.....	Gas lt. on end of W. jetty; red to seaward; bright to land .....	..	..	..	....
Grand Ribaud Island One fixed bright light	43 1.1 6 8.5	Square turret, 39 ft. high, on the summit of the island. In W. passage to Hyères Road	4a	112	10	1851
Rade d'Hyeres One fixed green light	43 7. 6 12.	From lt.-ho. at end of E. pier at Vieux Salines d'Hyeres .....	..	23	3	1876
Point Blanche One red fixed light	43 5.3 6 21.7	In the battery, on the point, at N. entrance to Hyères Road	4a	171	5	1863
PORQUEROLLES ID. One fixed and flash. lt.	42 59. 6 12.3	Square white tower, 56 ft. high, on S. point. Flash every 4 minutes	1d	262	20	1837
LEVANT, or TITAN ID. One fixed bright light	43 2.8 6 30.5	Square white tower, 39 feet high, on E. point	3a	246	15	1837
CAMARAT CAPE One rev. br. lt., 1 min.	43 12. 6 40.4	Square white tower, 69 ft. high, on the Cape. Period of revolution double that of Planier Island Light	1b	426	27	1837
St. Tropez One fixed red light	43 16.4 6 38.1	Stone tower, 56 ft. high, on jetty, on N. side of port	4a	51	7	1857 1889
Port St. Raphael	.....	Bright fixed light on jetty head .....	..	30	7	1873
Cannes One fixed bright light	43 32.8 7 0.8	Round tower, 34 ft. high, on the mole, W. side of entrance	4a	49	10	1854

Name and Character of Light.	Lat. N. Long. E. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
Hette Point One fixed br. or red lt.	43 32.6 7 7.2	On the S.E. point of the Gulf of Jouan. The lt. is bright from E. by S. $\frac{1}{2}$ S. southward, to W. $\frac{1}{2}$ N., thence red to W. by N. $\frac{1}{2}$ N. over Formigues Rocks .....	..	34	9 6	1870
GAROUPE One fixed bright light	43 33.8 7 7.9	Round tower, 79 ft. high, on Garoupe Peninsula, $\frac{1}{2}$ mile S. by W. $\frac{1}{2}$ W. of Antibes. Not seen from the south-westward till round Cape Gros	1a	338	20	1837
Antibes One fixed & flash. lt.	43 35.1 7 7.6	Round tower, 49 ft. high, on S.E. mole head. Bright flash every 2 minutes	4c	49	10	1834
NICE One fixed and flash. lt. One fixed green light One green, one red lt. One red light One red light	43 41.5 7 17.	Stone tower, 49 ft. high, on end of outer mole. Lt. bright, with red flash every $\frac{1}{2}$ min. Not lighted when harbour is unapproachable ... On commencement of mole..... Upper green, lower red light; on beach of Lazaretto	4c ● ..	76 ..	12 2	1855 1864 1869 1867 1867
VILLA FRANCA POINT One fixed and flash. lt.	43 40.5 7 19.6	Round tower, 110 ft. high, on Mala, or Cape Ferrat. Flash every $\frac{1}{2}$ minute	2c	223	18	1838
Villa Franca One fixed red light One fixed green lt.	..... .....	On terrace of Lazaretto .....	..	47 21	4 4	1867
Port St. Jean One fixed red light	43 41.4 7 20.	On the E. mole; in the Gulf of St. Ospizio ...	..	31	4	1867
CORSICA.						
CAPE CORSE One rev. br. lt., $\frac{1}{2}$ min.	43 1.7 9 24.1	Tower, 72 ft. high, on North end of Giraglia Island	1b	269	22	1847
Fornali Point One fixed green light	42 41.6 9 16.7	St. Florent Gulf. Tower 31 ft. high .....	..	46	5	....
Mortella Point One flashing light	42 43.2 9 15.3	Brick lt.-ho., 38 ft. high, on W. side of entr. to St. Florent Gulf. Lt. flashes every 4 secs....	c	140	14	1877
Port Rousse, or Rousse Id. One fixed red light One fixed bright light	42 38.8 8 55.7	Red lt. on N.W. point of island. Bright lt. on Isola Rossa jetty head.....	4a 4a	180 38	7 6	1857 1858
PUNTA REVELLATA One fixed bright light	42 35.2 8 43.3	Square tower, 52 ft. high, on extremity of Revellata Point	1b	269	23	1844
Calvi One bright fixed lt.	..... .....	At the foot of the citadel.....	..	97	11	1867
SANGUINAIRE ISLAND One fixed and flash. lt.	41 52.8 8 35.6	Square tower, 52 ft. high, on summit. Flash every 4 minutes	1c	322	20	1844
Ajaccio One fixed bright light One fixed red light	41 55. 8 44.4	Circular tower, 36 ft. high, on angle of citadel. Also a green lt. on end of jetty..... Red light on mole head at Margonajo.....	4a ..	62 24	10 6	1851
Port Propriano One fixed red light	41 40.8 8 53.8	Valinco Gulf. Brick tower on extr. of Scoglio Longo Pier. Lt. vis. northwd. betw. E. by N. & W. by S. A faint lt. also vis. over harbour .....	..	34	10	1878
Cape Feno One fixed bright light	41 23.6 9 6.4	Square tower, 37 ft. high, on the cape, S.W. coast of Corsica. Shows over an arc of 30° over the Monachi or Moines Rocks .....	..	65	13	1874
Bonifacio Port One fixed bright light	41 23.3 9 8.6	Square tower, 36 ft. high, on Madonetta Point, on N. side of entrance	4a	98	10	1854
CAPE PERTUSATO One rev. br. lt., 1 min.	42 22.2 9 11.1	Tower, 52 ft. high. 2 miles S.E. of Bonifacio Harbour, in the Strait of Bonifacio	1b	325	27	1844

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Name and Character of Light.	Lat. N. Long. E. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
PORTO VECCHIO One fixed and flash. lt.	41 35.7 9 22.	Square tower, 52 ft. high, on Chiappe Point, S. side of the bay. Flash every 4 minutes.....	1d	217	20	1845
ALISTRO One bright fixed light	42 15.7 9 32.5	Octagonal tower, 82 ft. high, on the heights of Alistro, N. of Aleria Point	1a	308	20	1864
St. Nicholas One red fixed light	.....	Temporary light.....	●	..	4	1869
Bastia One bright fixed light One green fixed light One red fixed light	42 41.8 9 26.9	Circular tower, 36 ft. high, on Dragon bastion On l'Eperon, new head of old mole	4a ● 4a	82 36 36	11 5 5	1864 1863 1861
SARDINIA.						
ASINARA ISLAND One fixed bright light	41 7.6 8 17.3	Circular tower, 62 ft. high, on Caprera, or Scorno Cape, N. part of island. Shown seaward from W. by S. $\frac{1}{2}$ S. to S.S.E. $\frac{1}{2}$ E....	1a	262	24	1859
Port Torres One fixed bright light	40 50.7 8 24.4	Tower, 38 ft. high, on E. mole head. Shown seaward from E. by S. $\frac{1}{2}$ S. to W. by N. $\frac{1}{2}$ N.	4a	40	10	1852
TESTA CAPE One fixed and flash. lt.	41 14.7 9 8.9	Square yellow tower, 148 ft. high. Bright fixed lt., with red flash every 3 minutes ...	3c	220	15	1845
Lavezzi Island One fixed light	41 20.1 9 16.2	Tower, 41 ft. high. Shows a br. fix. lt., but has a red sector of 80° over the Lavezzi Rock, and a green sector of 105° to N., from Perduto Rock to Prete Rock.....	4a	90	12	1874
RAZZOLI ISLAND One fixed bright light	41 18.5 9 20.5	N. point, in Bonifacio Strait. A red sector of 7° over Lavezzi Rock	2a	282	16	1846
Caprera Island <i>Proposed</i>	41 14.3 9 29.7	Proposed (1861) on Galera Point, the N. point of the island.....	..	..	..	....
CAPE FERRO One rev. bright light	41 8.7 9 31.3	Tower, yellow, 110 ft. high, on hill, on N.E. extreme of island. Light revolving every $\frac{1}{2}$ minute	4b	220	17	1861
TAVOLARA ISLAND One fixed and flash. lt.	40 55. 9 44.7	Iron frame, on N.E. end of island, S. side of Gulf of Terranova. Flash every 2 minutes	1c	540	30	1868
CAPE BELLAVISTA One bright fixed light	39 55.8 9 43.3	Square tower, on the cape	1a	541	30	1866
CAPE CARBONARA One rev. br. lt., $\frac{1}{2}$ min.	39 5.3 9 32.6	Circular yellow tower, 98 ft. high, on N.E. hill of Cavoli Island. Light shown seaward, from N.E. $\frac{1}{2}$ N. to N.W. $\frac{1}{2}$ W.....	1b	241	25	1858
ST. ELIAS CAPE One fixed and flash. lt.	39 11. 9 9.9	Circular tower, 44 ft. high, on Fenale Point. Bright lt., with red & br. flashes alternately ev. 2 min. Obscured by E. and W. points of the gulf, W. of S.W. $\frac{1}{2}$ S. and E. of S.E. $\frac{1}{2}$ E.	4d	239	14	1860
Cagliari Harbour Two fixed red lights	39 12.6 9 7.3	One on each side of entrance	●	14	4	1856
CAPE SPARTIVENTO One bright fixed light	38 52.6 8 50.8	On the S. cape of Sardinia	2a	264	23	1866
SAN PIETRO ISLAND One fixed and flash. lt.	39 8.7 8 13.9	White tower, 61 ft. high, on Cape Sandalo, W. extreme of island. Flash every minute	2c	436	28	1864
CAPE CACCIA One fixed and flash. lt.	40 33.6 8 10.1	Dark tower, 82 ft. high, on W. point of entrance to Porto Conté. Red flash every 4 m.	2c	610	26	1864 1869

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
ITALY.						
San Remo	43 48.8	Bright light, on S. mole	●	29	3	1866
One white, one green lt.	7 46.3	Green lt. on N. mole; they lead up to the mouth of the harbour		27	3	
Maurizio Port	43 52.6	1. Near end of S. mole; bright to eastward, red to westward.	●	31	1	1857
1. One br. or red light	8 1.7	2. On N. mole; shown from S.W. $\frac{1}{2}$ S. to N.E. by E. $\frac{1}{2}$ E.		29	3	
2. One fixed bright lt.						
Oneglia	43 53.1	Bright lt. on E. mole; green lt. on W. mole	●	26	3	1858
One fix. br., one green lt.	8 2.6	of port		23	1	
DELLE MOLE CAPE	43 57.3	Octagonal tower, 68 ft. high, on the summit of the Cape. Shown from W. by N. $\frac{1}{2}$ N., seaward, to N. by E. $\frac{1}{2}$ E.	1a	307	20	1856
One fixed bright light	8 10.4					
Wade Port	44 16.4	On San Lorenzo Fort	4a	46	10	1857
One fixed bright light	8 26.4					
Savona Port	44 18.7	Bright lt. on end of E. mole. Red lt. on end of N. mole	●	28	3	1857
One br., one red light	8 29.5			21	3	
GENOA						
BATTERY	44 24.6	Square yellow tower, 217 ft. high, on battery at Cape San Benigno, at W. end of W. mole	1b	370	30	1841
One rev. br. lt., 1 m.	8 54.1					
West Mole Head	.....	Upper bright, lower red lt. (temporary.) Mole is being extended 100 yds. beyond the its....	●	46	3	1840
East Mole Head	44 24.4	Revolving light every $\frac{1}{2}$ minute. Time-ball...	●	94	10	1840
	8 55.3					
Guard Ship	.....	A green light	4a	28	..	1867
Port Camogli	44 21.5	Iron column, on S. end of mole	●	23	3	1866
One red fixed light	9 5.1					
Porto Fino	44 18.2	From a house on N. side of entrance	●	23	3	1857
One fixed bright light	9 12.7					
Sta. Margherita	44 19.7	On E. end of Ligure mole, N.W. angle of Rapallo Bay	4a	35	10	1866
One bright fixed light	9 12.7					
Porto Venere	44 3.1	Iron stand, on San Pietro Point	4a	23	8	1857
One fixed bright light	9 50.2					
TINO ISLAND	44 1.6	A white tower, 227 ft. high, on the S.W. part of the island	3a	384	18	1839
One fixed bright light	9 51.					
SPEZIA	44 6.	1. Upper bright, lower red lt., from light vessel moored off Lagora mole	..	..	..	....
1. Red and bright lts.	9 48.	2. West mole-head, Mercantile Port	..	..	..	1867
2. One fixed bright lt.		3. Red lt. on N. side, and green light on S. side of Arsenal basin entrance	..	..	..	1878
3. Red and green lights						
Spezia Breakwater	.....	A breakwater, 2,400 yds. long, to be sunk 3 ft., is constructing. The West channel through it is marked by a pontoon, showing a red lt. above a green lt., and by a white lt. on Fort Sta. Maria. The E. channel by a pontoon with green and red lt., and a bright lt. on Sta. Theresa Point. It is dangerous to pass between the floating lights	..	..	..	1874
Ierici	44 4.4	An iron pillar on the mole	●	23	1	1867
One fixed green light	9 54.3					
Viareggio	43 51.9	Octagonal red tower, 39 ft. high, on the N. jetty. Shown from N. by W. to S.E. Also a red lt. on S. mole, and green lt. on N. mole	4a	46	10	1863
One bright fixed light	10 14.5					

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height in feet	W. by N.	Visible in Miles	Year established.
LEGHORN, or Livorno							
Meloria Shoal One red fixed light	43 32.7 10 13.1	Iron frame on S. end of shoal, 200 yds. from tower	4a	60	6	1867	
LEGHORN One rev. lt., 40 secs.	43 32.6 10 17.7	Circular white tower on S. part of islet, S. of the harbour. Flashes red and bright alternately	2b	154	19	....
Curved Breakwater 1. One fixed light 2. One fix. & flash. lt.	..... .....	1. White tower on N. end. Lt. is green through an arc of 65° over Meloria Bank. Keep br. lt. in sight while passing the bank 2. White tower on S. end. Flashes every 40 secs.	4a 6a	74 51	10 2	1857 1869	
North jetty	.....	Bright fixed lt. on S.W. extreme	4a	39	7	1857	
Marzocco Tower	.....	A light in stormy weather .....	..	..	..	....
Vada							
1. One fixed red light 2. One fixed bright lt. 3. One fixed bright lt.	43 19.2 10 21.8	1. Red lighthouse in centre of fort 2. Small light on pier 3. Iron pile lighthouse on centre of shoal	● 4a	130 55	8 10	1867 1868	
Capraia Island							
1. One fixed bright lt. 2. One fixed bright lt.	43 2.9 9 51.1	1. On Ferrajone Cape, S. side of the harbour mouth 2. On the head of the S. mole	● ●	116 20	12 3	1857	
ELBA ISLAND							
Port Ferrajo Two fixed bright lts.	42 48.9 10 20.1	1. Tower, 59 ft. high, on Stella Fort, on W. side of the bay 2. On Fort Gallo, near Sasita Marittima	4a 4a	200 21	6 5	186 186	
Port Longone Two fixed bright lts.	42 45.2 10 24.5	1. On Focardo Fort, S. side of the bay 2. On San Giovanni Point. A light proposed for the head of the jetty	4a 4a	105 46	13 8	184 1864	
PALMAJOLA ISLAND One rev. br. lt., $\frac{1}{2}$ min.	42 51.9 10 28.4	Square tower, 46 ft. high, on centre of island, in Piombino Channel	2b	344	25	1844	
Pianosa Island							
1. One bright fixed lt. 2. One lt., alternating bright and red	42 35.1 10 5.8	1. On battery W. of the port 2. From the tower of the penal establishment; changes every minute	4a 4b	78 140	10 17	1861 1868	
Port Talamone One fixed bright light	42 33.1 11 7.8	On end of the castle wall, S. of the town	4a	98	10	1865	
Port San Stefano One fixed bright light	42 26.8 11 6.6	Near Lividonia Point, right of entrance. Shown from N. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S.	4a	108	10	1865	
AFRICA ROCK One red fixed light	42 21.5 10 3.8	On iron piles, on the rock, at the S. end of the bank	4a	56	11	1867	
GIGLIO ISLAND							
One br. rev. lt., 1 min.	42 22.5 10 53.8	White tower, 78 ft. high, on Vaccareccole Hill. Lt. masked to southward, from S.S.E. $\frac{1}{2}$ E. to S.S.W. $\frac{1}{2}$ W. A bright fixed lt. is shown on Giglio mole head	2b	1017	26	1864	
Giannutri Island One fixed br light	42 14.5 11 6.3	On southern hillock	4a	312	10	1871	
Port Ereole Two bright fixed lights	42 23.7 11 12.7	1. On Sta. Barbara battery, left of entrance... 2. Grey tower, 39 ft. high, on Rocca Fort, S. side of entrance	4a 4a	52 201	8 12	1865 1830	

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CIVITA VECCHIA One rev. br. lt., 40 secs.	42 5.4 11 47.1	Grey tower, 105 ft. high, on S. end of break-water, or Antemurale. Shown seaward from N. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E.	2b	120	16	1840 1860
Civita Vecchia Harbour Two <i>green</i> fixed lts.	.....	One at the end of Bicchieri Mole; the other on the Lazaretto Mole, on N. side	●	23	3	1863
RIVER TIBER						
Fiumara Grande One fixed bright lt.	41 44.5 12 15.2	On N. part of San Michele tower, 78 ft. high, 1 mile from S. point of entrance. Shown from N. by W. $\frac{1}{2}$ W. to S.E. by S.	3a	77	15	1860
Fiumicino Two fixed lights	41 46.3 12 13.5	Red light on N. mole; green light on S. jetty	4a	20	4	1825 1878
ANZIO or ANZO POINT One rev. br. lt., 1 min.	41 26.8 12 37.3	Round tower, 36 ft. high, on battery, on point W. of mole	3a	92	15	1866
Port Innocent XII. One <i>red</i> fixed light	.....	On mole; to be left to southward in entering	4a	23	6	1866
MONTE CIRCELLO One bright fixed light	41 13.3 13 4.1	Round tower, 71 ft. high, on Cervia Battery. Shown from E. $\frac{1}{2}$ N. to W.N.W.	3a	124	17	1866
Port Badino Two bright fixed lights	41 16.9 13 12.	One on E., one on W. dike of Portatore Canal	4a	15	4	1866
Terracina One bright fixed light	41 16.9 13 15.5	On the mole head	4a	26	6	1866
GAETA 1. One fixed & flash. lt. 2. One fixed light	41 12.4 13 35.3	1. On Sta. Catherine tower, 76 ft. high. Flash every 3 minutes	4c	235	18	1854
		2. On Sta. Maria tower, at entrance. Lt. is red seaward, but bright in the harbour	4a	62	8	1857
PONZA ISLAND 1. One br. rev. lt., $\frac{1}{2}$ m. 2. One bright fixed lt.	40 53.1 12 57.4 40 53.7 12 57.7	1. Square red tower, 52 ft. high, on Mte. della Guardia, S. end of island	2b	741	26	1866
		2. White tower, 101 ft. high, on Mount Rotunda della Madonna, on W. side of the island	2a	200	10	1858
3. One fixed <i>red</i> light	.....	3. Red tower, 34 ft. high, on battery at head of jetty	6a	39	3	1867
4. N.E. Point Revolving lt. <i>proposed</i>	40 55.5 13 0.	4. Proposed revolving lt., $\frac{1}{2}$ min.	2b	..	..	....
Vandotena Isle One fixed bright light	40 47.5 13 25.5	At Nicolo Port .....	●	..	..	1869
BAY OF NAPLES						
ISCHIA ISLAND						
Point Caruso <i>Proposed</i> light	40 45.4 13 51.3	One fixed bright light proposed	1a	197	24	....
Sant' Angelo Point <i>Proposed</i> light	40 51.4 13 53.3	Light proposed .....	..	..	..	....
Bagno Port 1. One fixed and flashing light 2. One <i>green</i> , one <i>red</i> light	40 44.8 13 56.5	1. Red tower, 81 ft. high, at entrance of port. Bright fixed lt., with red flash every 3 min.	4c	43	10	1856
		2. Green lt. on W. side, red lt. on E. side of entrance	●	14	3	1857

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BAY OF NAPLES—(continued).						
PROCIDA ISLAND	40 46.3	Square tower, 51 ft. high, on Chiupetto Point	4a	75	12	1847
One fixed bright lt.	14 1.1					
CAPE MISENO	40 46.6	Octagonal tower, N. side of Bay of Naples ...	3b	292	20	1869
One br. rev. lt., 1 m.	14 5.3					
Baia	40 48.8	Iron tower, 33 ft. high, on Tenaglia Fort	4a	46	10	1856
One fixed bright lt.	14 4.7					
Poszuoli	40 49.3	On new mole, or outer pier of Caligula bridge.	4a	26	4	1860
One fixed red light	14 6.8	Lt. red seaward; bright to the harbour.....				
Nisita Island	40 47.9	Red tower, 60 ft. high, on N. point of end of	4c	78	12	1841
One fix. lt., with flash	14 9.8	mole. Flash every 2 minutes				
NAPLES						
1. St. Vincent Mole	40 50.	Rebuilt, on extremity of mole; gray tower,	6c	49	12	1874
One fix. and flash. lt.	14 16.	with green lantern. Shows red seaward,				
every 3 minutes		and white within the port				
2. Mole	40 50.3	2. Red tower, 130 ft. high, on the elbow of the	3b	158	20	1824
One rev. br. lt., 2 m.	14 15.5	mole				1843
3. Green fixed light	.....	3. On end of St. Gennaro mole, at Mercantile	4a	52	6	1843
		Port. Obscured towards St. Vincent mole..				
Torre del Annunziata	40 45.3	On the mole.....	..	33	2	1871
One fixed red light	14 26.8					
CASTELLAMARE	40 41.6	Red tower, 68 ft. high, on battery at mole	4b	106	15	....
One fixed and flash. lt.	14 28.2	head. Flash every 3 minutes				
		Red lt. at end of mole constructing				
Campanella Point	40 34.1	On S. extremity of Bay of Naples. Leads	4a	77	10	1846
One fixed bright light	14 19.5	through the Bocca Piccola, inside Ischia ...				
CAPRI ISLAND	40 32.1	Tower, 59 ft. high, on Carena Point, S.W. end	1a	246	20	1867
One rev. br. lt., 2 min.	14 11.8	of the island				
Cape d'Orso	40 37.8	Red tower, 69 ft. high, on extremity of Cape.	4c	82	12	1862
One fixed and flash. lt.	14 40.8	In the Bay of Salerno. Flash every 3 min.				
Cape Fuente	40 39.	Red tower, on the Cape. In the Bay of	4a	38	10	1864
One fixed bright light	14 44.	Salerno				
CAPE PALINURO	40 1.8	Octagonal tower, on a house; guide from	1a	675	25	1870
One bright fixed light	15 14.7	Naples to Strait of Messina.....				
Point Infreschi	39 57.	Revolving-light, 1 min., proposed	4b	..	..	....
<i>Proposed</i>	15 25.1					
CAPE SUVERO	39 2.5	White tower on the Cape. In the Gulf of	4c	141	18	1869
One fixed and flash. lt.	16 9.	Santa Eufemia. Flash every 2 minutes.....				

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
SICILY.						
FARO One fixed and flash. lt.	38 16.1 15 39.2	On Pelorus tower, 51 ft. high. Flash every 3 minutes.....	4d	72	13	1853
Santa Agata One fixed light	38 15.1 15 36.	At 4 miles N. of Messina. A red, green, and bright lt., in connexion with the electric cable across the Strait .....	●	..	..	1865
La Pace	.....	At 2½ miles N. of Messina; white, red, and green light, for electric cables.....	●	..	..	1865
MESSINA 1. One fixed & flash. lt. 2. One green light 3. One red light	38 11.5 15 34.3	1. On San Ranieri tower, 132 ft. high, on E. part of Citadel Point. Bright lt., with red flash every 2 minutes. 2. On Fort Campana, San Salvatore	4b	134	12	1857
		3. On Punta Secca, ½ mile N.W. from San Ranieri lt.....	3a	85	2	1858
			5a	23	3	....
Catania 1. One fixed & flash lt. 2. Two fixed red lights	37 29.2 15 5.9	1. On the Sciarra Biscari, S. side of the port. Flash every 3 minutes 2. On end of old mole. Obscured over mole works in progress. Sciarra Biscari lt. W.N.W. leads S. of bell buoy, at extreme of works ..	4c	102	14	1863
			4a	27	2	1848
Cape Santa Croce One fixed bright light	37 14.4 15 16.2	White tower, 78 ft. high. Lt. shown seaward, from S. by E. to N.W. ½ N.	4a	104	14	1859
Augusta One fixed and flash. lt.	37 12.5 15 14.1	White tower, 66 ft. high, on N.E. corner of fort, on Avola Island. Flash every 1½ min.	4b	90	14	1858
Magnisi One fixed green light	37 9.3 15 14.7	White tower, 31 ft. high, on Greco Point, S. of the port. Shown eastward from S.E. ½ E. to N. by E. ½ E.....	4a	49	10	1859
Syracusa 1. One fixed red light 2. One fixed green lt.	37 3. 15 16.2	1. In Maniace Castle, N. side of entrance..... 2. White tower, 78 ft. high, on Massa Point, S. of entrance	4a	90	10	1858
			●	90	4	1864
MURRO DI PORCO One rev. br. lt., ½ min.	37 0. 15 20.1	White tower, 47 ft. high, on the cape. Shown eastward from N. to S.W. ½ S.	3b	114	14	1859
COZZO SPADARO One br. rev. lt., 2 min.	36 41.2 15 8.6	White tower, 154 ft. high, on the hill; near Torre Mobile Slope, S.E. point of Sicily. Shown to S. & E., from W. ½ S. to N.E. ½ N.	1b	269	22	1864
CAPE PASSARO One fixed and flash. lt.	36 41.5 15 9.8	On N.E. angle of fort, on the island. Bright fixed lt. for 3 minutes, then a red flash, preceded and followed by one minute eclipses	5c	129	12	1871
Correnti Island One bright fixed light	36 38.5 15 5.3	Tower, 80 ft. high, on island, near S.E. point of Sicily	4a	63	11	1865
SCALAMBRI or Secca Pt. One fixed bright light	36 47.1 14 30.3	White tower, 114 ft. high, on the cape. Shown from S.E. ½ S. to N.W., eastward.....	3a	123	18	1859
Licata One fixed bright light	37 4.8 13 55.	Temporary, on breakwater, S. coast of Sicily	..	16	5	1872
Girgenti 1. One fixed red light 2. One green light	37 16.9 13 32.4	1. On pier-head..... 2. On end of mole, constructing at Port Empedocle	4a	47	5	1868
			..	..	2	1872
MONTE ROSSELLO One fixed and flash. lt.	37 17.6 13 27.6	White turret, 26 ft. high, on the point. Fixed, with red flash every 2 minutes	3c	332	20	1859
CAPE GRANITOLA One bright fixed light	37 34.2 12 36.8	White tower, 110 ft. high, on S.W. point of Sicily.....	2a	213	19	1865

Lighthouses.

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Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Marsala One fixed and flash. lt.	37 47.4 12 27.1	White tower, 49 ft. high, on end of mole, entrance of new port. Flash every 3 min.	d	55	12	1849
FAVIGNANA ISLAND						
Marsala Point One fixed <i>green</i> light	37 54.4 12 22.8	White turret, 39 ft. high, on S.E. point of island.....	5a	61	10	1859
Point Ferro One br. rev. lt., 1 m.	37 55.8 12 16.1	White tower, 126 ft. high, on Ferro or Sottile Point, W. point of island.....	3b	141	20	1860
MARITIMO ISLAND One br. fix. & flash. lt.	37 57.7 12 3.9	White tower, 71 ft. high, on Libeccio, or S.W. point. Flash every 4 minutes	1c	240	21	1867
LEVANZO ISLAND One fixed bright light	38 1.2 12 21.1	White tower, 39 ft. high, on Cape Grosso, or N.E. point	3a	282	18	1858
Formiche, East Island One fixed <i>red</i> light	37 59.4 12 26.4	N.E. part of tower, 67 ft. high	4a	85	10	1858
TRAPANI 1. One fixed & flash. lt. 2. One <i>red</i> fixed light 3. One <i>green</i> fixed light 4. One fixed bright lt.	38 0.8 12 30.	1. Octagonal tower, 133 ft. high, on Colum- baja Island, S. point; on mole head. Flash every 3 minutes	4c	139	14	1855
		2. On end of mole; a guide to the anchorage	●	40	2	1860
		3. On Palumbo Rock, on end of breakwater...	..	..	..	1878
		4. On extr. of breakwater works, Ronciglio Pt.				
SAN VITO CAPE One fixed and flash. lt.	38 13.5 12 45.2	Circular white tower, 130 ft. high. Bright lt., with red flash every 2 minutes	3d	142	14	1859
CAPE GALLO One fixed bright light	38 14.1 13 24.1	Turret on the cape, N. of Palermo	4a	145	14	1854
Palermo 1. One fixed & flash. lt. 2. One fixed <i>red</i> light	38 8.3 13 22.8	1. White tower, 65 ft. high, on North mole. Flash every 2 min. Shown from N.E. by N. to E.S.E.	4c	92	12	1853
		2. Red lt. on N. mole extr. A green lt. is shown at the end of the sunken part of the S. mole constructing .....	..	38	2	1869
Termini	.....	Red lt. at end of breakwater constructing.....	..	18	4	1876
VULCANO ISLAND One fixed and flash. lt.	38 20. 14 55.	Rosario, cr S.W. point. Flash every 3 min. Shown southward, from E. $\frac{1}{2}$ S. to W. $\frac{1}{2}$ N.	4c	452	15	1853
Lipari Island One fixed <i>red</i> light	38 28.7 14 57.5	On E. side, foot of Mte. Rosa. Guide to Casa Bianca anchorage	4a	115	4	1867
Patti One fixed <i>red</i> light	38 9. 14 58.5	A short white tower; to show the anchorage in Patti Bay.....	●	17	4	1874
MILAZZO 1. One fix. lt. with flash. 2. One bright fixed lt.	38 16.1 15 18.3	1. On end of mole. Bright lt., with red flash every 3 minutes	4c	41	10	1865
		2. On N. extremity of peninsula	4a	287	12	1853

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
ITALY (South Coast).						
Sta. Veneré Lightvessel One fixed red light	38 46. 16 11.	Between Pizzo and Nicolo Tower, near N. part of breakwater	4d	39	..	1868
Reggio One fixed bright light	38 6.7 15 38.8	On church of Santa Maria, Porto Salvo, E. side of the entrance	●	75	5	1857
Cape del Armi One bright fixed light	37 57.3 15 41.	Octagonal white tower on the end of the cape; guide for Strait of Messina	4a	312	13	1807
CAPE SPARTIVENTO One br. rev. lt., 1 min.	37 55.8 16 3.5	White tower on square house, on the summit of the cape	1b	210	18	1867
CAPE COLONNE or Nau One bright fixed light	39 5.5 17 14.	Octagonal white tower.....	1a	133	20	1773
Cotrone One red fixed light	.....	On a house, on the great mole .....	..	23	2	1872
Taranto One bright fixed light	40 26.3 17 10.2	On E. end of San Paolo Islet	5a	66	10	1867
St. Vito Cape One fixed and flash. lt.	40 25.2 17 9.1	White tower, 118 ft. high. Flash every 2 m.	3c	150	20	1848 1869
Gallipoli 1. One fixed lt., flash every minute 2. One fixed bright lt.	40 2.5 17 56.1	1. White tower on St. Andrea Island 2. From cylindrical tower, 18 ft. high, on mole head	3c ..	149 36	15 6	1865 1876

MALTA ISLAND.

Marsa Musciet Harbour Two fixed bright lights	35 54.1 14 31.1	Lights vertical, on Tigne Point, W. side of the harbour.....	..	71 46	4	1859
VALETTA HARBOUR 1. One fixed bright lt. 2. Two fixed red lights	35 54. 14 31.5	1. White tower, 59 ft. high, on St. Elmo Castle. Shown seaward from N.W. by N. to S.E. by E..... 2. Red lts., vertical, on N.W. angle of Bicasoli Fort .....	..	167 80 55	15 4	1851 1858
Marsa Scirocco One flashing lt., $\frac{1}{2}$ min.	35 49.5 14 34.	Tower, 72 ft. high, on Dallamara Point, E. side of bay; flashes red and white alternately ...	3b	151	15	1853
GOZO ISLAND One rev. br. lt., 1 min.	36 4.2 14 13.3	White tower, 70 ft. high, on N.W. point, near Cape Giurdan.....	1b	400	24	1852
Lampedusa Island One fixed bright light	35 29.1 12 36.1	On Cavallo Bianco Point .....	..	..	..	1855

ADRIATIC SEA (West Shore).

CAPE STA. MARIA DI LEUCA One fixed lt., with flash	39 47.7 18 23.	White tower, 154 ft. high, on an elevation near extremity of cape. Flash every $\frac{1}{2}$ minute...	1c	335	27	1866
CAPE OTRANTO One bright fixed light	40 6.4 18 30.6	White tower, 98 ft. high, on S.E. point of Italy	4a	196	18	1867
Point San Cataldo One bright fixed light	40 23.4 18 19.1	Yellow tower on a house, near Lecce.....	4a	56	7	1866

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BRINDISI	40 39.8 18 1.	1. Circular tower, 36 ft. high, on N.W. Petagne Rock. Fixed lt., with flash every 3 min. ...	4c	72	13	1861
1. One fix. & flash. lt.		2. On Castello Island, Port di Mare.	4a	106	10	1844
2. One fixed red light		3. From lt.-ho. at end of mole of Port di Mare	a	33	9	1876
3. One bright fixed lt.		4. On S.E. entrance to inner harbour, on end of Little Mole.	4a	17	..	1868
4. One green light		5. Leading light on Minaret, on quay. ....	..	..	..	1873
5. One red light						
CAPE GALLO	40 41. 17 56.	White tower, 82 ft. high, on Torre di Penne.	3b	129	15	1861
One rev. br. lt., $\frac{1}{2}$ min.						
Port Monopoli	40 57.3 17 18.7	On head of Castello mole. ....	..	..	..	1858
One fixed bright light						1878
Mola	41 3.9 17 6.9	On the eastern pier.	●	..	9	1858
One intermitting br. lt.						
BARI	41 8. 16 53.5	1. White tower, 174 feet high, on San Cataldo Point. Flash every 2 minutes	1c	218	20	....
1. One fixed & flash lt.		2. On mole head. Obscured from S.E. by E. by the North to N.N.W. $\frac{1}{2}$ W.	●	23	5	1859
2. One red light		3. On extreme of Old Mole. ....	..	30	4	1869
3. One green light		4. From tower near extremity of breakwater, constructing. Bell-buoy marks extr. of works	a	31	5	1877
4. One red light						
Molfetta	41 12.7 16 36.6	Tower on extremity of detached mole. Flash every 3 minutes	4a	64	14	1848
One fixed and flash. lt.						
Barletta	41 19.9 16 18.7	White tower, 62 feet high, on end of eastern mole	4a	69	14	1864
One fixed bright light						
Manfredonia	41 38. 15 56.	1. Near mole-head.	●	26	6	1864
1. One bright fixed lt.		2. South of town, near East mole, for packet steamers. Red flash every minute	4c	65	14	1868
2. One fixed & flash. lt.						
Port Mattinata	41 40.8 16 2.5	Stone tower, 15 feet high, on Rossa or Mte. Grugno Point. Flash every 3 minutes	4a	253	18	1866
One fixed lt., with flash						
Pelagosa Island	42 24. 16 16.	On summit of island. Fixed lt. with br. flash every $\frac{1}{2}$ minute.	1c	135	18	1875
One fix. & flash. br. lt.						
VIESTI	41 52.1 16 12.5	White octagonal tower on the Sta. Croce Rock, near Gargano Head. Light visible from N.W. $\frac{1}{2}$ N. by N. and E. to S.	1a	131	15	1867
One bright fixed light						
TREMITI ISLANDS	42 8.5 15 31.9	1. Octagonal tower, 59 feet high, on E. end of Caprara Island. Vis. betw. N.W. by W. $\frac{1}{2}$ W. by N. and E. to S. by W. $\frac{1}{2}$ W.	4a	118	17	1868
1. One bright fixed lt.		2. On Custom-house, E. side of Sta. Nicola Id.	4a	43	6	....
2. One bright fixed lt.						
Port Ortona	42 19.7 14 24.7	On extremity of new mole, in construction	4a	36	10	1872
One bright fixed light						
ANCONA	43 37.6 13 31.1	1. White tower, 54 ft. high, on Monte dei Cappuccini, $\frac{1}{2}$ mile E. of port. Hidden to N. of S.E. by Mount Conero	2b	406	25	1860
1. One rev. lt., bright 45 seconds, eclipsed 45 secs.		2. Green lt. on N. end of S. mole. Mole-head not to be approached nearer than 100 yds. ....	..	34	9	1868
2. One green light		3. Red lt. on new N. mole, not in bad weather. Green lt. on S. mole bears S.S.W. 66 yards from extreme of breakwater	..	34	3	1868
3. One red light						
Sinigaglia	43 43.7 13 13.3	One on N. mole; one on E. canal; changes to green lt., with freshets.	●	59	10	1865
Two bright fixed lights			●	22	2	1864
Fano	43 51.3 13 0.9	Tower, 51 feet high, on East mole	●	58	11	....
One fixed bright light						
Pesaro	43 55.6 12 54.5	Tower, 39 ft. high, on E. mole	●	50	9	....
One fixed bright light						
Cattolica	43 58.5 12 43.6	Light red to sea, bright to land	●	18	7	....
One fixed light						
Rimini	44 4.8 12 34.4	White tower on end of stone jetty; the other on end of E. jetty. Lights in one lead into the harbour	4a	69	10	1862
Two fixed bright lights			●	25	4	1864
Cesenatico	44 12.5 12 24.3	Towers, 44 and 29 ft. high, $\frac{1}{2}$ mile from, and near end of breakwater, on E. side of channel. In one, S.W., lead up to canal	●	30	9	....
Two bright fixed lights			..	55	10	....
Cervia	44 16. 12 21.1	Temporary, on end of mole, during reconstruction of lighthouse	4a	49	3	1875
One fixed bright light						
Corraini	44 29.5 12 16.4	Intermitting lt., $\frac{1}{2}$ min., on octagonal tower, 80 feet high, near S. entrance of canal, on port side. Fixed lt. on end of pier, at 875 yards from flashing lt. In one they lead up	4c	87	17	1862
One interm., one br. lt.			●	24	6	1868

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Magnavaca	44 40.7	Near mole.....	●	32	4	....
One bright fixed light	12 14.8					
Punta di Goro	44 48.0	Tower, 59 feet high, on right side of entrance	4a	66	..	1865
One fixed bright light	12 20.8	to River Po				
Maistra	44 59.	Proposed fixed light on the point.....	..	..	..	....
<i>P. oposed</i>	12 32.1					
Port Chioggia	45 13.7	On Fort San Felice tower, S. point of entrance	4a	52	12	1863
One fixed br. light	12 17.4					
VENICE						
Malamocco	45 20.5	Bright lt. on Rocchetta inner mole, S. side of	4a	48	10	1855
One fixed bright lt.	12 19.1	entrance; green lt. on S. side of entrance of	4a	48	6	1860
One fixed green lt.		Spignon Canal. In one, N.W. by W., 1,380				
One fixed br. lt., red		yds. apart, they lead in				
flash $\frac{1}{2}$ min.		Octagonal tower on end of N. mole.....	6c	38	10	1874
Porto di Lido	45 26.	St. Erasmo, N. side of channel.....	..	..	9	....
One fixed bright lt.	12 30.					
PIAVE VECCHIA	45 28.8	White tower, 139 ft. high, on E. point of Port	●	148	14	1853
One fixed bright light	12 35.1	Jesola, or Piave Vecchia				
Grado Lightvessel	45 41.5	In 5 fms., near Port Primero. Bright lt., with	4a	30	10	1869
One fix. br. lt., red flashes	13 23.7	red flash every 2 min. Steam fog-trumpet				
Grado	.....	Three small fixed leading lights .....	..	16	2	1873
Duino	45 46.	Fixed light	●	12	1	1862
One bright fixed light	13 36.					
Sdobba Point	45 43.	Proposed light.....	..	..	..	....
	13 32.					
Barcola	45 40.9	From iron post on mole. Cannot be lighted in	..	18	4	1874
One fixed red light	13 45.2	strong N.E. winds				
TRIESTE	45 38.8	1. On Santa Teresa mole. Flash of 8 secs. ev.	3b	116	13	1758
1. One intermit. br. lt.	13 46.	$\frac{1}{4}$ min. Fog Horn, 2 blasts every $\frac{1}{4}$ min. ...	..	..	..	1863
2. Two br., one red lt.		2. Triangularly on S. Carlo mole. Upper lt. red	..	17	2	1867
3. One br., one green lt.		3. On Giuseppino mole. Green lt. seaward...	..	..	..	1874
4. Two red, 2 green lts.		4. Two red lts. on S. end of new breakwater;				
		two green lts. on N. end of ditto. Vessels				
		should pass S. of red lts.				
Capo d'Istria		From lantern at end of Galere Mole, Trieste	..	17	2	1876
One fixed green light		Bay				
Muja Bay	45 36.	Stone tower, 36 feet high, on Point Sottile, S.	4a	46	9	1869
One bright fixed light	13 43.	point of bay in Trieste Bay				
One red fixed light		On mole-head .....	..	19	2	1876
Port Rose	45 31.	On the end of small mole at San Bernardino	..	33	8	1872
One fixed green light	13 34.5	Point, entrance of port in Pirano Bay.....				
Pirano Port	45 31.2	1. One on each mole head. Lts. red seaward,				
1. Two fixed lights	13 33.7	bright to land	●	15	2	1843
2. One fixed green lt.		2. From lantern at head of new mole .....	..	22	2	1876
3. One fixed red light		3. On bastion on Point Pirano, or Madonna	5a	33	9	1872
		della Salute				
Bassania	45 29.5	White tower, 62 feet high, on Salvore Point.	●	112	15	1818
One revolving lt., 1 min.	13 29.2	Steam Fog-trumpet, 10 secs. in ev. 40 secs.				1870
Port Umago	.....	A green light at extremity of mole. Light pro-	..	..	5	1876
		posed at Pegalotta Point				
Port Quieto	45 18.	On Dente, or S. pt. Obscured in-shore of S.S.W.,	..	41	12	1872
One fixed bright light	13 34.	or outside Civran Shoal; and over becca del				
		Val, betw. N.N.W. $\frac{1}{4}$ W. and N.W. $\frac{1}{4}$ N.				
Parenzo	45 14.	On mole.....	●	19	4	1866
One fixed red light	13 36.					
ROVIGNO	45 2.2	1. White tower, 43 feet high, on Giovanni di	3b	73	12	1864
1. One fixed & flash. lt.	13 37.1	Pelago Rock. Alternately red and white				
2. One fixed light		flashes, 2 min.	●	19	4	1865
Port Fasana	44 56.	2. On mole. Lt. red to seaward, bright to land	..	23	8	1872
One fixed bright light	13 48.	On the extremity of the jetty in the harbour...				
BRIONI ISLANDS	44 57.	Lt.-tower, 49 feet high, on S. extr. of Scoglio	4b	65	14	1877
One rev. bright light	11 43.	Grande. Lt. shows flash ev. $\frac{1}{2}$ min., visible				
		seaward betw. N.W. by W. and N.E. $\frac{1}{4}$ E.				
Pola	44 52.5	1. On C. Compare, betw. N.E. $\frac{1}{4}$ E. & S.W. $\frac{1}{4}$ W.	a	55	10	1860
1. One fixed bright lt.	13 51.	2. From lightvessel, 3 cables N. of Olivi Id. ...	..	..	..	1873
2. Two fix. bright lts.	.....	3. On Olivi Id. and main. In line, indicate di-				
3. Two red fixed lts.		rection of water pipes				
4. One red, one green lt.		4. Red lt. on Fort Franz small mole; green lt.				
		on S. Pietro Island.....				

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
Port Veruda One fixed <i>red</i> light	44 50.3 13 50.	From iron stand on Verudella Pt., near keeper's dwelling. Lt. shown seaward betw. N.W. & W. & S. by E. & E., obscured betw. S. by E. & E., & E. by S. Vis. towards Port Veruda. Keep at least a cable off Verudella Point ...	a	39	8	1877
CAPE FROMONTORE One fixed light Lower <i>red</i> fixed light	44 45.3 13 54.3	White tower, 88 ft. high, on Porer Rock, 1 mile S.W. of the cape. Lower red lt. from base of tower to S. by E., over Pericolosa Rock	3a a	111 27	16 6	1832 1876
Merlera Point	44 49.	Light proposed	..	..	..	....
Punta Nera	44 57.5	Fixed bright light on house	..	44	9	1873
Port Rabas One fixed <i>green</i> light	45 4.3 14 9.5	On St. Andrea Point	a	40	10	1871
Galiola Rock One fix. & flash. lt.	44 43.7 14 11.	Iron tower, 64 ft. high. Red flashes every ½ minute	4b	71	10	....
Unie Island	44 37.3	On Netak Point	6a	44	8	1873
Lovrana	45 17.	Light proposed	..	..	..	....
Port Ika	.....	One fixed br. lt. near head of Quarnero Gulf	..	138	2	1873
Volosca One fix. <i>red</i> and br. lt.	45 21.1 14 19.5	Shown on mole head, red seaward between S.S.W. & W. and S.E. by E. & E., bright over remainder of horizon	..	18	3	1876 1878
FIUME 1. One fixed bright lt., with <i>red</i> rays 2. Lt.-vessel, showing upper <i>red</i> , lower br. lt. 3. One fixed <i>green</i> lt.	45 19.5 14 26.	1. On shore at western part of town. Shown bet. S.W.N.W. and S. & E. By day a red & white globe is shown from lighthouse. 2. Moored, at extr. of breakwater constructing, S. by W. 1½ cable from shore lt. No. 1. 3. From Zichy pier-head constructing, S. of barracks Entering, pass W. of lt.-ves. betw. lt. & No. 1 lt.; when green lt. on pier-head appears, steer S.E. for anchorage	.. .. ..	39 23 18	10 2 ..	1878
Porto Re One fixed & flashing lt.	45 15.3 14 33.6	Tower, red & white bands, on D'Ostro Pt., S. point of port. Bright flash every 3 minutes	5c	54	14	1872
Voschizza Point One fixed bright light	45 14. 14 35.	Lantern on iron stand, on N. point of Veglia Island; in Canale de Maltempo.	a	31	8	1875
Dubno Point One fixed <i>red</i> light	45 15. 14 34.5	Small light in Canale de Maltempo	..	72	..	1875
Ertac Point	.....	Green light in Canale de Maltempo	..	23	2	1875
Czirquenizza	45 10.2	A fixed red lt. on S. mole, Maltempo Canale.	..	13	3	1874
Port Selce	45 9. 14 43.	A fixed br. lt. on E. pt. of Port Selce, and a fixed green light on end of pier	a ..	39 13	12 2	1875 1875
Port Malinsca One fixed <i>green</i> light	45 7.5 14 30.2	At end of mole, on N.W. side of Veglia Island, Gulf of Quarnero	●	19	2	1872
Plaunick Island	.....	Corsia Channel. Light proposed	..	..	..	....
Negrito Point	44 58.5	Red light on S.W. side of Veglia Island.	a	..	5	1874
Bescannova One fixed <i>green</i> light	44 58. 14 46.	On Cricin Point, near port, S.E. end of Veglia Island	..	54	6	1874
Novi One fixed <i>red</i> light	45 7.5 14 47.	On the mole at Novi, in the Morlacca Channel	..	12	3	1873
Segna Port 1. One bright fixed lt. 2. One <i>red</i> , one br. lt.	44 59.2 14 53.5	1. On the Mari Art mole. Not shown in bad weather. 2. Bright lt. on mole to N.W.; red lt. to S.W.	● ..	28 ..	8 7	1865 1873
Port Veglia One fixed bright light	45 1.5 14 34.7	From mole-head, Veglia Id., Gulf of Quarnero. No lenses towards harbour	a	23	9	1877
Parvicchio Island One fixed bright light	44 56. 14 46.	Iron frame on red building, with yellow shutters, on Maistro Point, N.W. pt. of island.	a	67	10	1875
Terstenich Island	44 40.3 14 35.5	Stone tower; fixed white lt., with red sector of 114° towards navigable channel on S. side of Cherso Island.	4a	88	15	1873
Cherso 1. One fixed & flash. lt. 2. <i>Light proposed</i> 3. One fixed light 4. One fixed light 5. Fix. & flash. lt. ev. m.	45 7.2 14 16.5	1. On Point Prestenisee, Gulf of Quarnero. Bright lt., with red flash every 3 minutes 2. On Glavina Point 3. On Covacine Point, on end of little mole 4. On Molino Point; only for Lloyd's steamers 5. On Zaglava Rock, W. side of Cherso Id.	5c .. ● ● 5c	56 .. 24 7 66	11 .. 10 2 13	1872 1871 1864 1876
Palazziol	44 32.	Light proposed	..	..	..	....
Sansego Island	44 31.	Building on the island. Revolving light 1 min.	4b	..	17	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LOSSINI ISLAND						
Port Augusto or Lossin Piccolo	44 33.2 14 25.	1. Iron column, in red & white bands, on W. end of Moriar Rock. Lossin Piccolo; red to entrance, from W. by S. $\frac{1}{2}$ S. to N.E.; br. to seaward, from S. by E. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S.	4a	36	10	1867
1. One br. or red lt.		2. From pole, on Colludaz Rock	..	29	3	1876
2. One fix. green lt.		3. At the town	●	17	2	1874
3. One fixed red lt.						
Cigale Port	44 31.8 14 26.5	On Madonna Point, South side of entrance ...	4a	34	8	1865
One fixed green light						
Port San Pietro	43 23.2 16 33.	From mole head, Port San Pietro, N. coast of Brazza Island. Shown between S.W. $\frac{1}{2}$ S. northward, to N.W. $\frac{1}{2}$ N.	a	..	5	1878
One fixed green light						
Jablana	44 42.3 14 53.7	In Morlacca Channel. One fixed bright lt., one red light	..	47	12	1875
Two beacon lights			..	33	2	1875
Carlopage	44 31.2 15 4.5	On end of new mole. Not shown during the bora	..	16	5	1873
One bright fixed light						
Lukovc	44 26.	Light proposed	..	..	..	....
Arbe Island	.....	Light proposed at Sorigno Point, and light building at Gabovacatrida	..	..	..	....
Point Loni	44 42.	North extreme of Pago Id. Light proposed...	..	..	..	....
Port Pago	44 27.	Bright lt. from green column at head of mole	..	16	2	1874
Gruizza Island	44 24.5	Fixed lt., varied by red flashes every minute, on tower, 39 ft. high	5c	56	12	1873 1876
Lutostrak	44 22.	Light proposed	..	..	..	....
Selve Island	44 21. 14 42.	From iron stand on keeper's dwelling, 50 yds. from extremity of St. Antonio Point	6a	23	8	1875
One fixed bright light						
Idolo	44 10.	Light proposed	..	..	..	....
BIANCA POINT	44 9.7 14 49.5	White tower, on N.W. end of Grossa, or Lunga Island. A fixed lt., with flash every 2 min.	3b	130	13	1849
One fix. & flash. br. lt.						
Point Amica	44 7.6	Bright fixed lt. on the point, near Zara	4a	39	9	1869
Zara	44 7.2 15 13.5	On each point of the entrance.....	●	16	4	1853
Two fixed red lights						
Port Sale	.....	E. coast of Grossa Id. Light shown from iron post off Lorini mole-head	..	20	2	1877
One fixed red light						
Port Tajer	43 51. 15 12.	Tower, 85 feet high, painted in red and white bands, on N.W. extreme of Seestrie (La Sorelle) Rocks, entrance of Port Tajer	4b	156	17	1876
Fixed br. lt., with red & br. flashes every min.						
Babae Island	43 57.3 15 23.7	In Pasman Strait. Shown from crane on W. end of island, betw. N.E. by N. & S.E. $\frac{1}{2}$ S.	6a	22	10	1874
One fixed bright light						
Stretto	.....	A small lt. shown from buttress of swing bridge	..	20	2	1873
Sebenico	43 44. 15 53.	1. On S.E. end of small island, at entrance ...	..	25	5	1875
1. One fixed red light		2. On mole. Lt. is bright to N.W. & N., and red to S.E. and E.	●	18	3	1865
2. One fix. br. or red lt.			4b	128	17	1872
Lucietta Rock	43 37.5 15 34.5	On the rock. A flash every half minute				
One br. fix. & flash. lt.						
Port Bogosnizza	43 31. 15 55.	White tower on Mulo Rock, at entrance.....	4a	77	13	1873
One bright fixed light						
Brazza Island	43 20. 16 24.	On Speco Point, East side of Spalatro Strait ...	6a	55	9	1875
One fixed bright light						
Spalatro	43 30.2 16 26.5	1. On extr. of new mole, on E. side of entr., which extends 500 yards W. by N. from Boticeia Point.....	..	24	5	1878
1. One fixed green lt.		2. From bridge near railway station. Fixed bright light, with red sector	..	..	2	..
2. One fixed bright or red light						
Almisse	43 26.4	Red light for Lloyd's steamers	..	..	..	....
Macarska	43 17. 17 1.	On mole-head. Lt. is red seaward, and br. to harbour and over neck of peninsula.....	..	20	3	1873
One red or bright lt.						
Lesina Island						
Port Gelsa	.....	Br. fix. lt. on N. mole. Not lit during the bora	..	18	2	1871
Pocognidol Rock	43 8.	Red lt. at E. entrance to Lesina Channel	a	76	7	1872
Vodnach Rock	43 10.	Building on Vodnach Rock	..	..	..	....
San Giorgio Point	43 7.5 17 12.	On E. side of San Antonio church, on E. point of Lesina Island. Temporary	..	30	3	1874
One bright fixed lt.						

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LISSA ISLAND						
PROMOTORE POINT	43 4-3	White tower, 92 feet high, on Promontore or E. point. Flash every minute. Shown to S. and E. from N.W. by W. $\frac{1}{2}$ W. to S.	1a	125	16	1836
One fixed & flash. lt.	16 15-3					
Comisa	43 2-3	On harbour mole. Lt. is red seaward, br. to harbour, W. end of Lissa.....	..	..	..	1873
One red or bright lt.	16 5-					
Port S. Giorgio	43 4-5	Stone tower, 30 ft. high, on Hoste Island	6a	30	3	1874
One fixed red light	16 12-3					
Sabbioncello Peninsula	43 2-7	1. Tower, 36 ft. high, on Cape Gomena, N.W. end of peninsula	a	79	10	1874
1. One bright fixed lt.	17 0-3	2. At extreme of mole, Orebiccio; temporary ..	..	24	..	1875
2. One green fixed lt.						
Port Curzola	43 57-9	1. On mole head, Port Pedocdo. Shown through channel to W.N.W. & to eastward. Green sector towards port, and also towards Curzola Channel.....	..	20	6	1869
1. One red fixed light	17 7-5	2. Square tower on Sorelle Rock, in the Curzola Channel	6a	60	..	1871
2. One fixed bright lt.						
Cazza Islet	42 45-	Lighthouse, painted red and white vertical stripes, on Gradisca Point	5a	308	10	1878
One red light	16 29-2					
ROSSO PORTO	42 43-3	White tower, 56 feet high, on Skrigova Point, S. end of Lagosta Island .....	..	342	21	1851
One fixed bright light	16 53-5					
Olipa Island	42 45-5	On E. end of island, Bocca Falsa, Kalimota Channel. New white stone tower, 306 yds. W. of former lt.-ho. Light shown between W. by N. $\frac{1}{4}$ N., southward, to E. by N. $\frac{1}{4}$ N. ....	..	..	..	1872
One fixed red light	17 47-					1878
Port Slano	42 47-	From mast on Dogna Point, N.W. point of entrance .....	..	49	5	....
One fixed green light	17 50-					
Gravosa Port						
1. One fixed green lt.	42 38-	1. On Cantaflo mole	●	18	4	1867
2. One fixed bright lt.	18 3-1	2. On outer Pettina Rock, at entrance of port ..	6a	88	8	1872
3. One fixed red light		3. On N. end of Daxa Rock, at entrance .....	..	51	5	1872
St. Andrea or Donzella Id.	42 39-	Stone tower, showing a fixed br. lt. with red flash every 15 secs.	4c	223	14	1873
One fixed and flash. lt.	15 57-					
Ragusa	42 38-	On outer end of new mole at Fort Molo. Red seaward.....	●	25	4	1873
One fixed light	18 7-					
CATTERO GULF	42 23-	1. Tower, 55 ft., on summit of Point D'Ostro ..	3b	263	20	1874
1. One rev. br. lt., $\frac{1}{2}$ m.	18 32-	2. On end of new mole at Castel Nuovo .....	..	20	2	1873
2. One fixed red light		3. Meligna, on Lazaretto, vertical; vis. betw. S.W. $\frac{1}{4}$ W. & E. by S. $\frac{1}{2}$ S.; guide to the anchorage	a	26	4	1866
3. Two fix. bright lts.		4. At St. Domenica Point, on W. side of Catene Strait.....	..	..	..	1878
4. One fixed red light		5. From wooden support at N.W. pt. of entr. of Catene Strait .....	..	13	..	1878
5. One fixed green lt.		6. At Port Risano .....	..	12	2	1876
6. Occasional red light		7. On mole head of Cattero. Red northward towards Persagno, and white towards town				
7. One fix. red & br. lt.						
Budua	42 16-	From lamp-post on mole head .....	..	..	2	1872
One fixed bright light	18 50-					
Antivari	12 5-0	From mast above white house on Volovica Point, S. side of bay. Light temporarily discontinued, 1878	4a	121	8	1864
One fixed bright lt.	19 4-5					
Durazzo	41 17-1	On the wall of Quarantine Office. Lt. bright betw. W. $\frac{1}{4}$ S. and S.W. by W. $\frac{1}{4}$ W., red betw. S.W. by W. $\frac{1}{4}$ W. and S. $\frac{1}{4}$ W., and br. betw. S. $\frac{1}{4}$ W. and S.E. by E. $\frac{1}{4}$ E.	5a	52	12	1856
One fixed light	19 29-8				10	1878
Saseno Island	40 30-	On the N.W. summit of the island. Flash every minute .....	..	328	21	1871
One bright revolving lt.	19 13-6					
Avlona or Valona	40 25-5	On a point 2 miles S. of lazaretto.....	4a	82	5	1864
One fixed red light	19 27-9					
Port Palermo	40 3-	Light proposed .....	●	..	..	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CORFU ISLAND						
TIGNOSO	39 48.2	Tower, 55 ft. high, on summit of rock	●	100	14	1825
One fixed bright lt.	19 57.5					
Corfu Harbour	39 37.1	In the citadel	●	240	12	1822
One fixed bright lt.	19 56.5					
Lefkimo Lightvessel	39 27.5	On N. part of shoal, in 5 fathoms.....	●	18	5	1825
One fixed bright lt.	20 5.2					
Salternes	.....	A small lt. near Salternes, at S.E. end of island	..	24	3	1874
PAXO ISLAND						
LAKA POINT	39 13.	White tower, 121 ft. high, on N. end of island.	●	369	22	1842
One fixed bright lt.	20 9.	Shown to N. and W., from S. by W. to E. by S.....				
Port Gayo	39 11.5	White tower, 70 ft. high, on the convent on	4a	107	10	1825
One fixed bright lt.	20 12.3	Madonna Island, E. coast of Paxo				
Santa Maura	38 50.5	Circular, on the mole .....	..	54	9	....
One fixed bright light	20 42.9					
Ithaca Island	38 22.3	1. At Port Vathy. On Andrea Point, E. side	..	30	6	1848
1. Two fixed bright lts.	20 42.6	of entrance .....	..	14	..	1848
2. One red and green lt.		2. In the lazaretto, S. side of the harbour;	..	..	..	....
		only shown in the channel				
FANO ISLAND	39 51.5	Round white tower, 46 feet high, on Point	2c	346	25	1872
One fixed and flash. lt.	19 27.	Kastri, East point of Fano Island. Bright				
		fixed light, red flash every minute				
CEPHALONIA ISLAND						
GUARDIANA ROCK	38 8.	White tower, 100 ft. high, on the island, out-	..	122	16	....
One fixed bright lt.	20 26.5	side of Argostoli				
Lixuri	38 12.	On the mole, on the W. side of the harbour...	..	18	..	1861
One red fixed light	20 27.					
Theodore Point	38 11.6	Doubtful if shown.....	..	35	4	1865
One bright fixed lt.	20 29.5					
Port Viscardo	38 27.5	On West point; guide for channel between	..	..	..	....
One bright fixed lt.	20 35.9	Ithaca and Cephalonia				
Missolonghi	38 19.5	On St. Saviour's, or W. pt. of entr. to lake; 6	..	..	10	1858
One fixed bright light	21 23.3	miles N.W. by W. & W. from Bakari Point...				
Patras	38 14.4	White open column, 40 ft. high, on mole head.	5c	55	12	1858
One fixed and flash. lt.	21 46.3	Flash every 2 minutes				1869
Kastro Roumeli	38 19.7	On S. angle of fort, N. side of entrance to Gulf	a	38	6	....
One fixed bright light	21 46.3	of Corinth.....				
Cape Morno	38 22.	Near River Morno, Gulf of Corinth	4a	46	7	1869
One fixed red light	21 53.					
CAPE PAPAS	.....	Temporary iron tower on extr. of spit. A flash-	6a	30	8	1877
One fixed red light		ing lt. will be shown on the cape, vis. 20 miles				
		off. (Lt. temporarily discontinued, Dec. 1878)				
Zante Island	37 48.6	1. Bright lt. on Cape Krionero, E. side of the	..	93	12	1869
1. One fixed bright lt.	20 54.6	island.....	..	30	6	1859
2. One fixed red light		2. From red iron pillar on mole-head .....	..	22	2	1864
Glarenza	37 56.5	On mole-head				
One bright fixed light	21 9.2					
STRIVALI ISLANDS	37 15.2	Square tower on summit of Stamphaní Island,	..	127	12	1829
One fixed bright light	21 1.2	South of the convent.....				
CAPE KATAKOLO	37 38.	Tower, 1 mile within South point of peninsula.	4b	149	17	1865
One fixed and flash. lt.	21 18.8	Fixed light, with flash every 2 minutes				
Navarin Bay	.....	On South extreme of Pylos Island .....	..	116	5	1875
One fixed red light						
Marathonisi	36 44.7	On Crane Island, Port of Marathonisi. Fixed	3c	98	15	1873
One fixed and flash. lt.	22 35.5	light, with red and white flashes every min.				

CAUTION.—The lights in the Ionian Sea are defective, and not visible so far as reported.

Name and Character of Light.	Lat. N. Long. E. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
ARCHIPELAGO.						
CERIGO ISLAND						
SPATHI CAPE	36 22.8	Stone tower, 82 ft. high, $\frac{1}{2}$ mile from N. pt. of Id. Shown seaward from W. by S. $\frac{1}{2}$ S. to S.S.E. $\frac{1}{2}$ E. Flash of 10 secs. in ev. min. ...	●	363	24	1857
One fix. & flash. br. lt.	22 57.5					
Kapsali Bay	36 8.5	E. side of the bay, on S. end of Island. Shown southward, from S.S.E. to S.W. $\frac{1}{2}$ S. ....	..	91	8	1853
One fixed bright lt.	23 0.3					
Cape Monemvasia	36 41.3	Lighted occasionally .....	..	..	..	1851
One fixed bright light	23 3.5					
Spezzia Island	37 15.6	Near N.E. point of the island, in the Gulf of Nauplia .....	..	93	10	....
One fixed bright light	23 10.3					
Poros Island	37 31.7	On the North coast of the island	4a	96	13	1870
One bright fixed light	23 25.7					
Egina Island	37 44.5	S.E. elbow of N. mole of the harbour, on W. side of the island .....	..	17	4	....
One fixed bright light	23 25.5					
Flaka Cape	37 45.7	Building .....	..	..	..	....
Light building	23 25.3					
ATHENS						
Cape Themistocles	37 55.8	Bright lt. 16 ft. above red lt., at 27 yds. within extreme of cape .....	..	43	6	1859
Two fixed lights	23 37.7					
Piræus	37 56.2	Red lt. on N. mole; bright lt. on S. mole; 73 yards apart .....	..	20	3	1839
Two fixed lights	23 38.2					
LIPSO ISLAND	37 56.4	Grey stone tower, 46 ft. high, on N.E. pt. Fixed lt., with flash of 10 secs. duration ev. 2 min.	4b	185	17	1865
One fixed & flash. lt.	23 35.7					
Neopont Canal						
Berdouan Island	38 11.1	Proposed on Cape Ala Marina .....	..	..	..	....
Proposed light	24 5.9					
Bourzi Tower	38 22.7	Proposed .....	..	..	..	....
Proposed	23 39.5					
Burj Narrows	.....	From mast near extreme of Western point, Burj Narrows .....	..	40	7	1878
One fixed bright lt.						
ZEÆ	37 39.5	White tower, 26 ft. high, on St. Nicolo, N. pt. of entrance. Fix. lt., with flash every min.	4c	108	12	1831
One fixed and flash. lt.	24 19.7					1860
SYRA	37 25.5	1. Circular tower, on W. mount of Gaidaro Island, off E. coast .....	..	105	20	1859
1. One rev. br. lt., 1 m.	24 58.8			14	..	1859
2. One fixed red light		2. On a mast at extreme of East mole works... On Cape Passa, or N.W. point, $\frac{1}{2}$ mile inland. Flash every 3 minutes. Shown westward, from S. $\frac{1}{2}$ W. to N.E. by E. $\frac{1}{2}$ E.	1c	696	30	1859
ANDROS ISLAND	37 57.5					
One fixed and flash. lt.	24 42.5					
Port Gavrión	37 52.5	On summit of Kastri Head, West point of entrance .....	..	225	7	1874
One fixed red light	24 44.					
Strongilo Island	38 48.3	White stone tower, 30 ft. high, on S. Lithada Island	4b	134	16	1870
One br. rev. lt., 3 min.	22 49.8					
GULF OF VOLO						
Cape Sesiklo or Touzia	39 22.5	On West side of entrance to anchorage .....	..	82	5	1864
One fixed red light	22 56.5					
Cape Kavoulia	39 6.3	One mile West of Trikirí Bay, N.E. side of entrance to Gulf of Volo .....	..	85	5	1864
One fixed red light	23 3.6					
GULF OF SALONIKI						
Kassandra Point	39 57.5	White stone tower, $\frac{1}{2}$ mile from extreme of low point, E. side of entrance to the gulf	●	52	15	1864
One rev. br. lt., 1 m.	23 22.					
Panomi Point	40 21.7	On E. side of gulf; lights vertical	4a	52	8	1865
Two fixed bright lts.	22 54.4					
Cape Kara	40 29.5	E. side of entr. to bay. Shows red to seaward, from S. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S.; br. to N. & E. Vespasian Shoal of 14 ft. lies 6 cables S.W. $\frac{1}{2}$ W. from the light	●	85	10	1864
One fix. br. or red lt.	22 49.7					
Saloniki	40 38.	Proposed light .....	..	..	..	....
Proposed light	22 56.					
CANDIA ISLAND						
Canea or Khania	35 30.2	White tower on extreme of mole, on E. side of port	●	75	10	1864
One fixed bright lt.	23 59.7					
CAPE DREPANO	35 27.3	White tower, 328 yards from extremity. Red flash every minute	●	197	15	1864
One revolving red lt.	24 14.9					
Suda Islet	35 27.9	In fort on South end; entrance to Suda Bay...	●	82	5	1864
One fixed green light	24 9.5					

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established.
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CANDIA ISLAND—(continued).

Rithymno or Retimo One fixed bright lt.	35 21.9 24 28.2	On the mole, on the N. side of entrance.....	..	50	10	1864
Candia or Megalo Kas- tron One fixed bright lt.	35 20.5 25 9.6	White tower on extremity of mole; N. side of entrance .....	..	52	10	1864
Paleo Castro <i>Proposed</i> light	35 12. 26 19.	Proposed .....	..	..	..	....

RHODES

The Port One revolving light	36 27. 28 16.2	On St. Elmo tower, 52 ft. high	4b	82	14	1863
Cape Kumburnu One fixed <i>red</i> light	36 27.2 28 15.8	On Molino, or N. point of the island	●	52	4	1863

Kos Channel 1. One <i>red</i> fixed light 2. One green fixed light	36 55. 27 18.3	1. Red lt. on Koum Point, N.E. point of Kos Island, on S. side of channel .....	..	59	5	1865
		2. Green lt. on point, on N. side of Kos channel .....	..	85	5	1865

SAMOS ISLAND

Tigani Port One fixed bright lt.	37 41. 26 56.7	On Fonia, or Possidon Point, S.E. coast of island.....	●	72	6	1864
Vathi Port One fixed bright lt.	37 46.3 26 59.3	On Kotsak Point, at E. entrance, N.E. side of island.....	●	131	6	1863
Kalolimno Island One revol. lt., 1 min.	37 3.5 27 7.4	White stone tower, on E. extreme of the island	4b	180	10	1864

Scala Nuova One bright fixed light	37 51.5 27 16.6	On western point of the islet, at the entrance of Scala Nuova Road	●	98	4	1863
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KHIOS STRAIT

Spalmatori Islands One br. rev. lt., 1 m.	38 30.3 26 18.5	White tower on E. point of Pasha Island, at N. end of strait. Light shown over 247° between S.W. by S. and N.W. by N.	4b	246	15	1863
Paspargo Island One fixed bright lt.	38 17.9 26 12.4	White stone tower on the summit, at S. end of strait.....	4a	118	12	1863
Port Kastros Two <i>red</i> lights	38 22.7 26 9.2	Vertically, on the mole, N. side of entrance to port, on Khios Island .....	..	52	4	1863

GULF OF SMYRNA

CAPE MERMINJI One fix. <i>red</i> or white lt. Lower <i>green</i> fixed lt.	38 37. 26 46.2	Octagonal white tower, 875 yds. within ex- tremity. The upper lt. bright to N.W., from W. by N. $\frac{1}{2}$ N. to N. by W. $\frac{1}{2}$ W. Red to S.W. from latter bearing to S. by E. $\frac{1}{2}$ E. The green lt. in same tower, toward the Merminji Rocks, which are dangerous...	2a	230	20	1863
					10	

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
SMYRNA						
Pelican Spit Light-ves. Two fixed <i>green</i> lights	38 25.2 26 58.1	Lightvessel, painted red, off Tani Kedessal, or Pelican Spit, on N. side. Lights vertical ...	●	52	4	1863
Sanjak Spit Light-ves. Two fixed <i>green</i> lts.	38 25.2 27 2.1	Lightvessel, red, in 6 fathoms, off spit, on N. side.....	●	52	4	1863
Sanjak Castle Spit Two fixed <i>red</i> lights	38 25. 27 1.9	On an iron staff, on a house, 48 ft. high, at the extremity of the point, on the S. side. Lta. vertical .....	..	49	4	1863
Smyrna Harbour Two fixed <i>red</i> lights		From wooden posts, one on outer breakwater, the other on interior mole head .....	..	..	..	....
Kavala One bright fixed light	40 55.2 24 25.5	On castle at extreme of town.....	..	148	8	1870
Kara Aghaj Bay One bright fixed light	40 56.3 25 8.5	On site of old tower on Fanar Point .....	..	72	8	1870
MITYLENI ISLAND						
Port Mityleni One fixed <i>red</i> light Two fixed <i>red</i> lights	39 6. 26 34.7	On the fort on the point .....	..	164	6	1863
		On each side of entrance .....	..	23	4	1863
Skammia Point One fixed <i>red</i> light	39 23. 26 21.5	On a house, on the N.E. point of Mityleni.....	..	66	5	1863
CAPE SIGRI One rev. br. lt., $\frac{1}{2}$ m.	39 12.8 25 51.2	White iron tower, 65 ft. high, on Sigri Island, off W. end of Mityleni Island	1b	180	24	1861
ELEOS ISLAND One fixed bright lt.	39 19.5 26 33.2	On the summit of the island on E. coast.....	3a	197	12	1863
Sivriji Point One fixed bright lt.	39 27.6 26 15.2	On N. coast, E. point of entrance to Sivriji Bay .....	..	82	6	1863
TENEDOS ISLAND One fixed bright light	39 50. 25 58.3	Iron tower, 49 ft. high, on Ponente or western point	3a	98	14	1861
Gadaro One fixed and flash. lt.	39 50.2 26 6.2	White iron tower, 29 ft. high, on islet. Red flash every 2 minutes	4d	59	12	1861
Cape Baba <i>Proposed light</i>	39 28.5 26 4.7	Red light proposed.....	..	..	..	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
DARDANELLES.						
Koun Kaleh Two fixed <i>red</i> lights	40 0.1 26 12.2	On W. battery, S. side of Dardanelles; vertical, a few feet apart .....	..	52	4	1856
CAPE HELLAS One rev. br. lt., 1 min.	40 2.4 26 10.8	Stone tower, 33 ft. high, on N. side of the S.W. entrance to the Dardanelles.....	2b	99	18	1856
Seddul Bahr Two <i>green</i> lights	40 2.3 26 12.1	On S. point of the fortress. Lights vertical...	..	52	4	1856
Khephes, or Barber's Pt. One revolving <i>red</i> light	40 5.3 26 22.3	White tower, 39 ft. high, on ruined battery. Red flash every $\frac{1}{2}$ minute.....	4b	59	12	1857
Kilid Bahr Two fixed <i>green</i> lights	40 8.7 26 22.9	Vertical; on Namaziah Fort .....	..	49 20	4	1858
Chanak Kalehsi Two fixed <i>red</i> lights	40 8.5 26 24.3	Vertical; on low battery, W. of town.....	..	59 46	4	1858
Nagara Point One <i>red</i> flashing light	40 11.4 26 24.3	On the tower; red flash every 10 secs.	4b	49	12	1858
Bovali Kalessi Two fixed <i>green</i> lights	40 12.9 26 23.2	Vertical; on fortress .....	..	46 26	4	1858
Peskieri Cape Two fixed <i>red</i> lights	40 16.7 26 46.2	Vertical .....	..	56	4	1861
Galata Two fixed <i>green</i> lights	40 19.5 26 34.7	Vertical; $1\frac{1}{2}$ mile S. of village, near a small stream .....	..	49 42	4	1858
Dardanelles Guard-ship Three fixed lights	.....	Now moored off Lampaco; painted yellow; red lt. on mast, and white light at each end of yard-arm .....	..	..	..	1872
Chardakh, or Toherdak Two fixed <i>red</i> lights	40 23. 26 40.9	Vertical; on low sandy point.....	..	49 39	4	1858
GALLIPOLI One rev. br. lt., $\frac{1}{2}$ min.	40 24.3 26 39.4	White stone tower, 39 ft. high, on W. shore, at N.E. entrance to the Dardanelles.....	●	115	18	1856
Fanar Point One fixed bright light	40 24. 26 44.3	E. shore of Dardanelles .....	..	..	..	....

SEA OF MARMORA.

Kutali Road One fixed bright light	40 30.6 27 28.1	On rock, between Kutali and Arablar Island...	5a	49	10	1861
Falio Port Two fixed <i>red</i> lights	40 29.4 27 40.7	Vertical; W. point of Artaki Peninsula, N. entrance to Rhoda Channel .....	..	138	5	1861
Marmora Island One fixed and flash. lt.	40 37.7 27 45.5	Square stone tower, 29 ft. high, on Fanar Island, off E. point of Marmora Island. Red flash every 2 minutes	●	132	12	1857
HOBA or KHORAZ PT. One fix. & flash. br. lt.	40 41.3 27 17.3	Iron tower, white, and 49 ft. high, on the summit of cape. Lt. in each $\frac{1}{2}$ min., vis. 15 secs., eclipsed 5 secs., br. flash 5 secs., & eclipsed 5 secs.	2b	180	20	1861
Erekli Point One fixed bright light	40 58.6 27 58.2	On West point of coast.....	4a	164	11	1861

126 SEA OF MARMORA, LIGHTHOUSES. AND BOSPHORUS.

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
STEPHANO BURUN One fixed and flash. lt.	40 57.3 28 50.6	Stone tower, 65 ft. high, 1 mile N.E. of cape. Flash every 2 minutes	3c	66	15	1857
Fanar Bay One fixed bright light	40 58. 29 1.8	On S. point, E. side of entrance to Bosphorus	4a	59	10	1856
GULF OF ISMID						
Dil Burnu One fixed <i>green</i> lt.	40 43.1 29 32.2	On S. point of entrance to Gulf of Ismid	●	40	5	1864
Zeitun Burnu One fixed <i>red</i> light	40 43.5 29 50.2	On N. side of Gulf of Ismid	●	83	6	1864
CONSTANTINOPLE One bright revolving lt.	41 0.5 29 0.9	White tower, 119 ft. high, on Seraglio Point. Flash every minute. Shown from W. by S. ½ S. to E. ½ N.....	●	98	15	1858
Skutari Two fixed <i>red</i> lights	41 1. 29 0.7	Vertical; in Leander Tower .....	..	66 68	4	1857
BOSPHORUS.						
Top Hane One fixed light	41 1.3 29 0.3	White stone tower on the rock .....	..	17	2	1856
Duimi Bank Two <i>green</i> lights	41 3.1 29 2.3	Lts. vertically from a mast on a white house on the Duimi Rock .....	..	39	4	1861
Bebek One bright fixed light	41 4.5 29 2.8	On end of bank .....	..	10	2	1863
Roumili Hissar Two <i>green</i> lights	41 4.8 29 1.8	Lights vertically; on wall of the fortress .....	..	46	4	1861
Khandilli Point Two <i>red</i> lights	41 4.2 29 3.4	Lights vertically; on the point.....	..	112	4	1861
Khanlijeh Two <i>red</i> lights	41 5.9 29 4.	Lights vertically; on the point.....	..	92	4	1861
Yeni Keni Lightvessel Three <i>green</i> lights	41 7.2 29 4.4	Lights in triangle; on edge of the bank, in 7 fathoms .....	..	46	4	1861
Umur Banks Lightvessel Three fixed <i>red</i> lights	41 9.3 29 4.7	W. part; lights in triangle. In 7½ fathoms, on W. edge of the bank .....	..	46	4	1861
Therapia Two <i>green</i> lights	41 8.6 29 3.	Vertically, on a point near S.E. end of Kiritch Burnu battery, a mile N.W. from Therapia	..	46	4	1861
Kavak Point Two <i>red</i> lights	41 10.5 29 5.1	Vertically; in fort.....	..	46	4	1861

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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BLACK SEA.

ROUMILI One fixed bright light	41 14.2 29 6.7	White stone tower, 99 ft. high, on European side of mouth of Bosphorus	3a	190	15	1830 1856
ANATOLIA One fixed and flash. lt.	41 12.8 29 9.2	White stone tower, 65 ft. high, on Asiatic side. Red flash and two bright flashes every 2 minutes	3c	249	20	1830 1856
BOSPHORUS LT.-VES. Two bright fixed lights	41 27.5 29 16.5	Two masts; in 55 fathoms, at 15 miles N.N.E. $\frac{1}{2}$ E. of the entrance .....	..	28 38	9	1869
KARA BURNU One bright flashing lt.	41 21.3 28 2.	Tower, red and white bands, 27 feet high, on the cape. Rocket and Lifeboat station	1e	302	27	1856
CAPE KURI One fixed lt., with flash	41 52.5 28 4.3	White tower, near extremity of cape. The lt. shows a flash every 2 minutes .....	..	174	15	1866
Burghaz Bay Two fixed bright lights	42 27.9 27 35.6	Lights vertical; on Anastasia Islet, S. side of bay	●	131	8	1863
Varna Bay One fixed bright light	43 10. 27 58.6	White stone tower, on Cape Galata, S. point of entrance	4a	164	10	1863
Varna One red light	43 11.7 27 58.3	On wall of the town	●	49	4	1863
CAPE KALIAKRA One br. rev. lt., 1 min.	43 21.5 28 30.2	White tower, near extremity of Cape Kallakra ..	..	164	16	1866
CAPE SHABLAH One fixed bright light	43 33.3 28 38.7	In beacon tower, 82 ft. high, on the hill above the cape	4a	82	12	1856
CAPE KUSTENJEH One fixed bright light	44 10.3 28 39.2	White tower, 45 ft. high, on the cape	4a	68	9	1860
DANUBE RIVER						
St. George's Mouth One rev. lt., 1 min.	44 51.1 29 36.9	Wooden tower, 64 ft. high, on S. end of Olluka or Sandy Island. Flashes alternately red and white	4b	65	10	1865
Sulina Mouth One fixed bright lt. One red fixed light	45 10.7 29 40.7	Circular white tower, 58 ft. high, on S. side of Sulina, or middle entrance	2a	69	15	1856
		Red light on East extremity of North pier-head	●	43	6	1862
FIDONISI One rev. br. lt., $\frac{1}{2}$ min.	45 15.5 30 10.2	White tower, 70 ft. high, on summit of Fidonisi, or Serpent Island, 24 miles E. $\frac{1}{2}$ N. from Sulina mouth of the Danube	2b	195	18	1846 1856
Dniester River One red, one bright lt.	46 4.7 30 29.2	Tsarigrad mouth. Red light from moveable beacon seaward of br. lt. In line show entr. ..	.. ..	47 23	7 5	1876
ODESSA						
CAPE FONTANA One fixed bright lt.	46 22.6 30 45.5	White tower, 76 ft. high, about 2 leagues S. of town	1a	200	16	1834 1861
Richelieu's Mole One fixed bright lt.	46 29.8 30 44.	Iron lighthouse, painted white, on the Military Mole. A reflected lt. from this is shown from the end of the Potapovski Mole	4a	31	6	1868
Quarantine Mole One fix. lt., red flash. One fixed red light	46 29.5 30 46.5	On a moveable iron stand, 30 ft. high. Bright light, with red flash every minute. Yellow flag by day	4c	44	8	1834 1864
		From stand at end of mole, in fine weather only ..	..	22	5	1874

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Berezan Two bright fixed lights	46 38.2 31 23.5	One on a pyramid, 52 ft. high; on the W. side of the Berezan Lake. In one they bear N.W. $\frac{1}{2}$ W., 682 yds. apart. Not shown in winter	●	78 23	10 8	1862
Kherson Bay One br. & green fix. lt.	46 37.5 31 29.2	On Mount Souvoroski, or Potemkin Hill. Green except to S.W., between S. by W. $\frac{1}{2}$ W. and S.W. $\frac{1}{2}$ W., where it is bright	●	148	14	1863
Adjigiol Lightvessel Three fixed lights	46 35.5 31 12.5	Lightvessel, black with blue band, in 22 ft., at end of shoal. Lights triangularly Fog Bell	●	43 36	8	1862
Adjigiol Leading Lights One red, one bright lt.	.....	Near the telegraph. Western lt. red; eastern bright. In one, E. by N. $\frac{1}{2}$ N., 1,380 yds. apart, they lead up	●	112 170	12 15	1866
BUG RIVER						
Sviatotoitski One red fixed light	46 45.5 31 55.	On piles, 30 ft. high, on Russian Spit, E. bank. Shown from S. to S. by W.	5a	34	7	1865
Voloiak One bright fixed lt.	46 44.5 31 53.7	From a house on West bank. Shown from S.E. by E. $\frac{1}{2}$ E. to E. by S. $\frac{1}{2}$ S.	4a	70	10	1865
Sievers Spit One bright, one red lt.	46 55.5 32 0.2	Bright lt. on the E. side of the river. Red lt. 818 yards to N.E. $\frac{1}{2}$ N. In one they lead through the channel	4a ..	30 55	6 8	1866
Nikolaev One red fixed light	46 57. 31 59.5	Near the landing-stage, S. side of the town ...	6a	47	7	1865
Fort Constantine Two bright fixed lts.	46 54. 31 59.5	One on the piles of the fort; the other on the E. bank opposite	6a	29 55	6 8	1865
TENDRA PENINSULA One rev. br. lt., 1 min.	46 19.4 31 30.5	Stone tower, 79 ft. high, 8 miles from N. end, and 13 $\frac{1}{2}$ miles S. $\frac{1}{2}$ W. from Kinburn fortress Fog Bell	2b	96	11	1827 1864
TARKAN CAPE One fixed bright light	45 20.8 32 30.5	White stone tower, 113 ft. high, on S.W. extremity	1a	117	12	1862
Eupatoria One revolving lt., 1 m.	45 9. 33 16.5	Flash every minute; red and white alternately	4c	52	8	1861
CAPE KHERSONESE One br. rev. lt., 1 min.	44 35. 33 21.2	White tower, 118 ft. high, at entr. to Sebastopol. (Apparatus und. r repair, Dec. 1878.)...	1b	108	12	1846 1863
SEVASTOPOL Two bright fixed lights	44 37.2 33 33.7	One on high cape, near Inkerman; the other at head of harbour, near Mount Mekenzieff. In one, E. by S., $\frac{1}{2}$ mile apart, lead up the harbour; only shown in that direction.....	● ●	305 629	20 29	1847
AITODOR CAPE One fixed bright light	44 25.4 34 6.1	Tower, 38 ft. high, on the cape.....	●	343	20	1835
Yalta One fixed red light	44 29.7 34 8.5	On Killis Point; Temporary lt.; visible between S.W. by W. and East .....	..	45	8	1874
STRAIT OF KERTCH						
KYZ AUL POINT One fix. br. & green lt.	45 3.7 36 22.4	W. side Kertch Strait. Black & white striped tower, 79 ft. high. Lt. br. from E. to S.W. by W. $\frac{1}{2}$ W.; green over Ilchan Kai Rocks from S.W. by W. $\frac{1}{2}$ W. to W. by S. $\frac{1}{2}$ S.; green over Kishla Reef and Higudyer Rock from E. to E. by N. $\frac{1}{2}$ N.	1a	203	20	1876
Kertch Strait Lt.-Ves. One fixed bright lt.	45 15. 36 29.3	Moored in 15 ft. water at Black Sea entrance. Pass to westward	●	..	4	1872
Ambelaki Bay One red, one br. lt.	45 16.8 36 26.2	Red lt. on edge of cliff at Kamisa. Bright lt. at Tschurnbash, 5 miles W.S.W. of Kamisa lt. In one, lead between Tusla Bank and shoal of Ak-burnu .....	.. ..	102 344	11 21	1873
CAPE PAUL One fixed bright lt.	45 18.2 36 29.7	Red iron tower on W. side of strait; visible betw. S.S.E. $\frac{1}{2}$ E. and S. $\frac{1}{2}$ E. Kept in sight while passing through eastern green sector of Kyz Aul Point light, clears dangers off Cape Takli and Kishla Point	3a	73	10	1864
Kertch One fixed red light	45 21. 36 30.	Red iron tower, 30 ft. high, on town wharf, near the church. Lt. shown from S.E. $\frac{1}{2}$ E. to E.S.E.	4a	36	7	1863

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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BLACK SEA (S. & E. Coasts).

KILI CAPE One rev. br. lt., 1 min.	41 10. 29 38.2	Light red stone tower, 49 ft. high, on the cape. Lifeboat and rocket station.....	1b	221	20	1859
Bender Ereklî One fixed bright light	41 18.1 31 25.8	White tower, 60 ft. high, on a hill, half a mile N. of Cape Baba. (Uncertain.)	5a	656	12	1854
Port Amastra One fixed red light	41 45.3 32 24.8	Stone tower on the summit of the extremity of the peninsula	●	312	10	1863
Cape Ineboli Two fixed lights	41 58.5 33 45.2	Lts. vertical, on a mast; on summit on E. end of the cape	●	85	4	1863
CAPE INJEH One br. rev. lt., 1 min.	42 6.5 34 57.8	Stone tower near extremity of cape.....	4b	92	13	1863
Sinub, or Sinope One fixed red light	42 1.3 35 13.5	White stone tower halfway up Boztepeh Point; rock to E. & N.	4a	344	8	1863
Samsoun Bay One fixed bright light	41 18.9 36 21.3	On Kalion Point, W. side of bay	●	56	10	1863
Kerasunda Point Two fixed bright lights	40 56.3 38 23.6	Lights vertical; on a mast on a white house, at extreme end of town	●	194	6	1863
Trebizond One fixed bright light	41 1. 39 46.4	White tower, 20 ft. high, on battery on Kal- mek Point	●	105	10	1861
Batoum Bay Two fixed bright lights	41 39.5 41 36.2	Lights vertical; on low point, W. side of bay	●	49	6	1863
POTI 1. One flash. lt., 1 min. 2. One red, one bright beacon light	42 9.1 41 36.7	1. White iron tower on the point. Flashes bright and red alternately	2b	118	17	1864
		2. At entrance of S. branch of Rion River. Red lt. on inner, bright lt. on outer beacon. In one, show the channel. Not lighted when the bar is unsafe.....	..	10 17	..	1868
SOUKHOUM POINT One br. rev. lt., 1 min.	42 58.5 40 57.	Circular iron tower, 102 ft. long, on the point, near Soukhoun Kalch, Coast of Circassia...	2a	121	17	1864
CHARDAK POINT One fixed bright light	44 6. 39 1.2	Temporary lt. on Kadoseh or Chardak Point, W. point of Touabs Bay .....	..	230	18	1874

SEA OF AZOF.

YENI KALEH One rev. br. lt., $\frac{1}{2}$ min.	45 23.3 36 38.3	Circular tower, 82 ft. high, on Cape Fanar, N.W. entr. of Kertoh Strait, $2\frac{1}{2}$ miles from fortress. Shown eastward, from N.N.W. to S.W. & S.; but pending completion of Pana- ghia lt.-ho., it shows betw. N.N.W. & S.S.W.	1b	409	25	1861
Berdianak 1. One rev. br. lt., 1 m. 2. One red, one green lt.	46 38.5 36 46.2	1. White and red tower, 72 ft. high, 600 yds. E.N.E. & E. from end of spit	●	79	10	1860
		2. A green lt. at N.W. end; red lt. at S.E. end of breakwater	●	17	4	1866
Bielosaral One fixed bright light	46 53.2 37 19.9	White tower, 66 ft. high, on Sandy Neck, 2,400 yds. from end of spit	●	74	10	1847 1856
Sazalnits Lightvessel Two fixed bright lights	46 59.3 38 13.8	Lts. vertical, on mizenmast; on S. side of channel, in 20 ft.; end of spit. Removed, in winter, to Taganrog.....	●	34 22	8 7	1856
Begliskaia, or Golden Bank Lightvessel Two red fixed lights	47 1.4 38 35.8	Lts. vertical, on mizenmast; red ball at main Fog-bell	●	46 36	12 11	1856 1859
Taganrog <i>Proposed Lightvessel</i> <i>Lighthouses.</i>	47 11. 38 56.	Proposed Lightvessel at entrance to River Don	..	..	..	....

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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ASIA MINOR (South Coast).

Adalia One bright fixed light	36 52. 30 45.5	Two-thirds of a mile E. of the harbour	131	8	1869
LISSAN EL KAHBEH Two fixed bright lights	36 14.5 34 1.7	Tower on low sandy point. Lts. vertical	●	49	8	1864
MERSINA or MERSYN One fixed and flash. lt.	36 45.8 34 40.7	White stone tower, $\frac{1}{2}$ a mile to S.W. of the town. Fixed lt., with flash every 2 minutes	40	53	14	1864
Kara-dash Burnu One fixed bright light	36 32.6 35 21.3	White stone tower on the point, W. side of Gulf of Iskenderun	●	131	8	1864

SYRIA.

Alexandretta Two fixed bright lights	36 35.5 36 10.3	Vertically, on a mast; Iskenderun Gulf, W. point of road	●	49	8	1864
Ras Ibn Hani One br. rev. lt., 1 min.	35 35. 35 43.7	White stone tower on point, 5 miles W. of Latakiah .....	..	46	13	1864
Latakiah One fixed red light	35 30.5 35 46.5	White tower on N. side of old castle .....	..	49	5	1864
Tripoli 1. One bright fixed lt. 2. One red fixed light	34 29.4 35 44.3	1. On a house in the middle of Ramkine, or Bluff Island	●	56	10	1864
		2. On lighthouse office, near lazaret .....	..	39	5	1869
BEIRUT 1. One rev. br. lt., 1 m. 2. One fixed red light	34 54.2 35 28.4	1. White stone tower, 437 yds. within the cape 2. On a white house, at the Port el Allah	4b ●	125 59	13 4	1863 1863
Saidon or Sidon Two red fixed lights	33 34.2 35 24.7	Vertically; on the S. end of the Jezireh, or islet, at the entrance .....	..	62	5	1866
Sur or Tyre Two fixed bright lights	33 17. 35 14.8	Vertically; on an old battery, on W. side of the town .....	..	56	8	1866
Acre or Akka One fixed red light	32 54.6 35 8.	White tower on ramparts, W. of town	●	46	10	1864
Haifa or Khaifa Two fixed bright lights	32 47.6 35 5.	Vertically; on old castle, to the right of the Sanitaire .....	..	66	8	1864
MOUNT CARMEL One fixed and flash. lt.	32 48. 35 2.	Tower, on terrace of ancient castle, below the monastery. A flash every 2 minutes	30	656	18	1864
YAFFA or JAFFA One revolving lt., 1 m.	32 3.2 34 44.6	White tower in S.W. part of town, near the beach. Flashes alternately red and bright	4b	69	14	1862 1864
CYPRUS ISLAND CAPE GATA One fixed & flash. lt.	34 33.7 33 2.5	White stone tower on the summit of the cape. Flash every 2 minutes .....	..	190	15	1864
Cape Kiti One fixed bright lt.	34 48. 33 36.8	On a house near the cape, on S. side of island, 8 miles S. of Larnaka	●	92	8	1864
Larnaka One fixed red light	34 55. 33 38.9	At end of town, 165 yds. from the Lazaret ...	●	46	5	1864

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
EGYPT.						
PORT SAID						
1. One br. flashing lt.	31 15.6	1. A light gray tower at beginning of West breakwater. An ELECTRIC LIGHT, flashing every 3 seconds	1b	180	20	1860
2. Red and green lights	32 19.3	2. A red lt. shown from W. breakwater head, and a green lt. from E. breakwater. Floating lts. are shown, red on the western, and green on the eastern side of the channel				1869
RIVER NILE						
DAMIETTA						
One br. rev. lt., 1 m.	31 31.5 31 51.	On three columns, painted in black and white bands	2b	176	18	1870
BRULOS						
One bright fixed lt.	31 36. 31 9.	On three columns, painted red, black, and white	1a	176	18	1870
ROSETTA						
One revol. lt., 5 secs.	31 29.5 30 19.	On three white iron columns; flashes red and white alternately	2b	176	18	1870
ALEXANDRIA						
1. One revol. bright lt.	31 11.1	1. White stone tower, on Eunostos Point. Flash ev. 20 secs. By report, ev. 6 secs.	..	120	20	1848
2. One red light	29 52.4	2. At S.W. end of new breakwater	..	..	..	....
ALMAIDA						
One fixed bright light	30 51. 29 11.2	Iron pillars, painted gray, in Arabs Gulf. A spring of fresh water near	1a	187	22	1872
TRIPOLI						
Dernah						
<i>Proposed</i>	32 45. 22 40.1	Fixed light proposed	..	..	..	....
Benghazi						
<i>Proposed</i>	32 9. 20 1.2	Fixed light proposed	..	..	..	....
Tripoli						
<i>Proposed</i>	32 54. 13 12.	Fixed light proposed	..	..	..	....
TUNIS.						
CAPE BON						
Red rev. lt. 1½ min.	37 4.7 11 3.3	White stone tower, 75 ft. high, ¾ mile from extr. of cape. The lt. is vis. for 3 secs. ev. 1½ min. betw. S.E. by S. and W. by S., except where Zembra Island intervenes from W.N.W. to N.W. by W. ¾ W.	1b	412	25	1876
By report every min.						
CAPE CARTHAGE						
One rev. br. lt., 1 min.	36 51.9 10 18.7	Tunis Gulf	..	482	26	1840
Goletta						
One fixed red light	36 48.6 10 18.6	On end of eastern jetty	4a	39	6	1850 1862
I CANI, AL KHELB, or DOG ROCKS						
One fixed bright light	37 21. 10 4.6	White tower, 70 ft. high, on summit of highest rock. Light uncertain	2a	129	17	1860
ALGIER.						
Port Cala, or Al Kalah						
One fixed red light	36 54.5 8 26.3	On E. side of entrance	4a	52	10	1862
CAPE ROSA						
One bright fixed light	36 57.3 8 13.9	Stone tower on square building on the cape	4a	418	12	1869
Bonah						
1. One fixed bright lt.	36 54.5 7 46.4	1. On Lion Point, ¾ mile N.E. of Fort Cioogne	4a	138	10	1841
2. One red, one green lt.	.....	2. Red lt. on N. jetty head (not shown in bad weather). Green lt. on S. jetty head. Also two yellow lts. at entrance of basin within the port	..	..	..	....
3. One fixed light	.....	3. Small light on Fort Genois	..	..	..	....

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
HAMRAH, or CAPE DE GARDE One rev. br. lt., $\frac{1}{2}$ min.	36 58.1 7 46.8	Lighthouse, 43 ft. high, at the entrance to the Gulf of Bona	●	427	15	1841
CAPE FERRO, or RAS HADID One revolving light	37 4.8 7 11.8	Stone tower, 58 ft. high, on Cape Ferro, or Ras Hadid. Flashes alternately red and bright every 30 secs.....	3b	218	20	1869
Stora Gulf						
Singes Island One fixed bright lt.	36 54.3 6 53.4	On a battery on the island E. of Stora	●	52	8	....
Srigina Island One fixed bright lt.	36 56.3 6 53.5	On the W. side of the gulf	4a	180	10	....
Philippeville Two fixed red lights.	36 52.9 6 56.5	One on Chateau Vert Point, W. of the town; shows betw. the head of large jetty and the dangers on W. side of bay; the other, or Skiddah lt., near Zouave barracks; shows over 16° from large jetty-head towards land	● ●	126 267	6 6	1874
EL DJERDA One fixed bright light, with green flash, 2 m.	37 1.4 6 32.4	White tower, 37 ft. high, on N.E. extreme, entrance of Gulf of Collo or Kola.....	4c	84	12	1863
Collo, or Kola One red fixed light	37 0.6 6 31.5	On S. side of entrance to the port.....	●	33	4	1862
CAPE BOUGIARONI One bright fixed light	37 5.1 6 29.9	Stone tower, 48 ft. high, on the cape	1a	564	31	1869
Jijelli One fixed bright light	36 50. 5 43.9	Lighthouse, 47 ft. high, on second rock from E.	●	49	8	1844
CAPE AFIA One bright flashing lt.	36 49.1 5 42.8	Stone tower on cape. Flash every 5 seconds	..	138	19	1871
Bougie or Bujeysa One fixed red light	36 45.6 5 4.3	Light shown from end of pier	●	23	3	1854 1875
Bouac Cape One bright fixed light	36 46. 5 5.1	On fort, at 1 mile N.E. $\frac{1}{2}$ E. of Bougie	●	482	15	1854
CARBON CAPE One rev. br. lt., 1 min.	36 46.8 5 5.1	Tower, 35 ft. high, on cape.....	1b	722	27	1851
CAPE BENGUT Building	36 57. 3 56.	White tower, 86 ft. high, building; for fixed light	1a	197	20	....
Dellis Point One fixed red light	36 55.5 3 55.8	On the extremity of the point	●	..	15	1844
CAPE MATIFOU One bright fixed light	36 48.7 3 14.9	Stone tower, 42 ft. high, on the cape, $8\frac{1}{2}$ miles E. of Algier lt.	4a	242	10	1868
ALGIER						
IT. DE LA MARINE 1. One fixed br. lt. 2. One red, 1 green lt.	36 47.3 3 4.3	1. White tower 2. Red lt. on N. mole head. Green lt. on S. mole head, obscured from line of red lt. to bell buoy at end of works	4a 4a	115 44	15 9	1834 1869 1868
CAPE CAXINE One br. rev. lt., $\frac{1}{2}$ min.	36 48.7 2 58.7	Stone tower, 144 ft. high, on the cape.....	1b	210	25	1868
Tipaza One fixed light	36 36. 2 26.3	Stone tower, 40 ft. high, on Point Ras el Kalla, 12 miles E. of Shershel light. (Officially described as a green lt., but reported to show as a bright lt., visible 16 miles off)	4a	102	4	1869

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SHERSHEL	36 36.8	1. High lt. on Fort Joinville; the other on pier	3a	124	15	1855
1. Two fixed bright lts.	2 11.9	2. On end of E. quay. (Temporarily discontinued, 1878)	●	25	3	1861
2. One red fixed light			●	15	..	....
CAPE TENES	36 33.1	Square tower, 85 ft. high, 2½ miles N. of	1b	292	27	1865
One revol. br. lt., 1 m.	1 20.8	Tenes, or Tenez				
Tenes	36 31.	In front of the town	●	131	8	1844
One fixed bright light	1 18.8					
CAPE IVI	36 5.2	Stone tower, 76 ft. high, halfway on the fall	1c	389	26	1870
One bright flashing lt.	0 13.3	of the cape. Lt. flashes every 4 secs.				
Mostaghanem	35 56.2	On small tower, 29 ft. high, near barracks	4a	121	10	1814
One fixed bright light	0 4.5					1859
	Long. W.					
Arzew	35 51.6	Lower red light on the jetty extremity; and	4a	25	8	1861
	0 17.2	higher lt. on islet	4a	66	10	1861
ORAN	35 44.3	1. Octagonal tower, 76 ft. high, on Fort Mers-	4a	118	9	1868
1. One bright fixed lt.	0 41.3	el-Kebir				
2. One green, one red lt.	.....	2. Green lt. at new port; red lt. at old port...	●	25	3	1866
CAPE FALCON	35 46.4	Octagonal white tower, 86 ft. high, on the	1b	340	25	1868
One br. rev. lt., ½ min.	0 47.3	cape				
CAPE DJAUMEL	35 43.	Building, to show a revolving lt. every ½ min.	1b	..	..	....
Building	0 57.					
HABIBAS ISLANDS	35 45.	Building, to show a fixed lt. with flashes	2c	..	..	....
Building	1 8.					
RASCHGOUN ISLAND	35 19.8	Stone tower, 60 ft. high, on N. point. Flashes	2b	267	22	1870
One flashing lt., 10 secs.	1 28.8	red and bright alternately				
Nemours	35 6.4	Tower, 44 ft. high, on the W. point of the bay	4a	305	10	1868
One fixed bright light	1 52.8					
Djama Ghazouat Bay	35 7.	On the E. point of the bay	●	276	8	1848
One bright fixed light	1 52.3					
Zafarine Island	35 11.	Proposed light	3	..	..	....
Proposed	2 26.					
MAROCCO.						
Melilla	35 17.9	On bastion, N.E. of village	3	..	..	....
Building	2 59.					
Alhucemas	35 14.7	On Torre Vigia, or look-out tower in the fort.	●	123	7	1853
One fixed light	3 47.2	Bad light				
Velez de Penon de la Gomera	35 11.	On the Penon, to N.W. of the town	..	262	9	1874
One fixed red light	4 16.					
CEUTA	35 53.7	Tower, 48 ft. high, on Moqueros Hill, or Almina	1b	483	23	1855
One rev. br. lt., 1 min.	5 17.3	Point. (Reported to revolve ev. ½ min., 1878)				
Tangier	35 47.	1. (Uncertain)	..	..	..	1867
1. One revolving light	5 48.5	2. On wooden landing-stage near Custom-	..	20	3	1877
2. One fixed red light		house				
CAPE SPARTEL	35 47.2	On the S.W. point of entrance to Gibraltar	1a	312	21	1864
One fixed bright light	5 55.7	Straits				

Name and Character of Light.	Lat. N. Long. W. °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established.
ATLANTIC ISLANDS.						
MADEIRA One bright fixed light, with flashes	32 43.3 16 39.5	Tower, 41 ft. high, on Ponta da Moura, Sao Lourenço, or E. point. Flashes every $\frac{1}{2}$ minute	2c	343	25	1870
Funchal One fixed red light	32 37.7 16 55.3	On the fort, on the Ilhao or Loo Rock	5a	112	8	1866
CANARY ISLES						
TENERIFE						
Santa Cruz 1. One fixed red lt. 2. One fixed br. lt.	28 28.5 16 14.9	1. Red light on mole head 2. Bright light near extremity of mole	● 6a	26 38	5 9	1857 1863
ROQUE BERMEJO PT. One fixed & flash, lt.	28 35.2 16 8.1	Grey tower, 39 ft. high, on Anaga Cape, E. extreme of Tenerife; bright flash every 3 minutes	1c	810	35	1864
GRAN CANARIA 1. One fix. & flash, lt. 2. One fixed red lt.	28 11. 15 25.3	1. Tower, 30 ft. high, on N.E. part of Isleta Peninsula. Red flash every 2 minutes 2. Red lt. on mole, Palma Town	3c ..	817 ..	20 5	1866 1859
Lobos Islet One fixed red light	28 45.4 13 49.1	On Martino Point, on N. side of islet	6a	95	9	1866
ALEGRAZAN ISLAND One bright revol. lt.	29 23.8 13 29.6	Grey tower, 49 ft. high, on Delgado Point, E. side of island. Flashes every $\frac{1}{2}$ min. Shown seaward, from N.N.W. $\frac{1}{2}$ W. to S.W. by W. $\frac{1}{2}$ W. The Grpigo Bank extends 1 mile to S.W.	4b	57	18	1866
LANZAROTE One bright fixed lt.	28 50.9 13 52.2	Grey tower, 31 ft. high, on Peñiguera Point, S.W. extreme of island	4a	51	12	1866
Port Naos Two fixed red lts.	28 57.4 12 32.9	On E. side of Lanzarote, 125 yds. apart. In one lead in through narrow channel	a	47 35	7 6	1866
FUERTEVENTURA One rev. br. lt., 1 m.	28 3. 14 31.4	Grey tower, 62 ft. high, on Jandia Point, S.W. extreme of island. Shown seaward, from N.N.E. $\frac{1}{2}$ E. to S.E. by E. $\frac{1}{2}$ E.	3b	108	15	1866
PALMA One rev. br. lt., 1 m.	28 50.1 17 46.9	Tower, 112 ft. high, on Cumbre, or N.E. point of Palma Island	2b	207	25	1866
AZORES						
Ponta Delgada 1. One fixed red lt. 2. Two bright fix. lts.	37 44. 24 41.2	St. Michael's Id. 1. Shown from tower, 26 ft. high, situated 200 yds. within extr. of break-water in progress 2. One on Custom-house; one on breakwater, now constructing	4a	47 20 ..	9 5 3	1878 1874 ...
Arnel Point One fix. & flash, br. lt. every 2 min.	37 49.3 25 8.5	Tower and keeper's dwelling on N.E. coast of St. Michael Island. Flashes vis. 25 miles off through arc of 240°	2c	222	18	1876
CAPE VERDE ISLANDS						
Porto Praya 1. One fixed br. lt. 2. One fixed red lt. 3. One fixed br. lt.	..... .....	St. Jago. 1. A fix. br. lt. on Quail Id., S. pt. 2. A fixed red lt. on Quail Island, N. pt. 3. At new landing place, Porto Praya. (These lights are private property, and not to be depended on.)	.. .. ..	85 65 ..	6 2..	............
BERMUDA ISLAND One rev. br. lt., 1 min.	32 15.1 64 51.6	A white iron tower, 106 ft. high, on Gibbs Hill, on S. side. Seen all round, except where hidden by the hills to the eastward, from N.E. $\frac{1}{2}$ E. to N.E. $\frac{1}{2}$ E., and from N.E. by E. to N.E. by E. $\frac{1}{2}$ E.	●	362	24	1846

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
AFRICA (West Coast).						
Senegal	16 0.8	French.] On the Government house, Ile de	..	..	6	1848
One fixed bright light	16 31.	St. Louis				
Almadie Point	14 45.1	French.] Square white tower, 39 ft. high,	4a	85	8	1866
One fixed red light	17 32.1	on western rise of point, 2 miles N.W. $\frac{1}{4}$ W. from Cape Verde light				
CAPE VERDE	14 43.5	French.] Square white tower, 65 ft. high,	..	370	27	1866
One br. rev. lt., $\frac{1}{4}$ min.	17 32.4	on the western mound of Cape Verde.....				
Cape Manuel	14 38.9	French.] Square white tower, 39 ft. high, on	4a	170	8	1866
One fixed red light	17 28.5	W. part of Gorée Bay, 6 miles S.S.E. from Cape Verde light				
Dakar Harbour	.....	French.] From iron pillar at extr. of E. pier.	..	15	4	1876
One fixed bright light		Small red light for mail steamer				
Gorée Island	14 39.9	French.] In the fort, on the summit of the	a	..	6	1848
One fixed bright light	17 24.5	Island.....				
SIERRA LEONE	8 30.	British.] White tower, 47 ft. high, on the	..	69	15	1849
One fixed light	13 18.5	cape. Is red over middle ground.				
One green light	.....	Small lt. on Government landing-place .....	..	..	..	1863
MONROVIA	6 19.	Liberian.] Red tower, 40 feet high, on Cape	..	..	..	1855
One fixed bright light	10 50.0	Mesurado. Said to be out of repair, and uncertain lt. shown from flagstaff				
CAPE PALMAS	7 22.1	Liberian.] Tower, 50 feet high, on the cape.	..	..	..	1847
One fixed bright light	7 44.3	Bad lt., visible 2 to 3 miles, and uncertain. Great caution required.....				
CAPE THREE POINTS	.....	A lt.-ho. to show 3rd order fix. K. proposed...	..	..	..	....
CAPE COAST CASTLE	5 6.3	British.] White tower, 46 ft. high, in Fort	..	192	12	1835
One fixed bright light	1 13.9	William.....				
ACORA	5 31.3	Red tower on western bastion of Fort James	3a	50	12	1871
One bright fixed light	0 11.5					
Lagos	Long. E. 6 26.	Temporary. On beach, East of lagoon. Light-	a	47	7	1877
One fixed red light	3 27.	house to be erected				
Fernando Po	3 45.6	On Fernanda (or William) Point, N.E. ex-	..	..	5	1866
One bright fixed light	8 47.0	trinity of Isabel Bay				
St. Thomas Island	0 20.5	Bight of Biafra. On Fort S. Sebastian, Anna	..	35	4	1866
One bright fixed light	6 42.7	de Chaves Bay				
Ascension	Lat. S. Long. W. 7 55.3	Red lt. on end of pier in Clarence Bay .....	..	..	..	....
	14 25.5					
St. Paul de Loando Lt.-V.	Long. E. 8 44.9	At N.E. end of Loando Reef. Should be passed	..	..	..	1863
One fixed light	13 16.2	to northward				
Benguela	.....	A fixed lt. is reported to be shown from fort...	..	..	5	....

Name and Character of Light.	Lat. S. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CAPE COLONY.						
TABLE BAY						
ROBBEN ISLAND	33 48.9	Tower, 86 ft. high, with red & white bands, on Minto Hill (highest part), on S. part of Id.	1a	154	20	1865
One fixed bright lt.	18 22.5					
GREEN POINT	33 54.1	Square tower, 52 ft. high, 400 yards from low water	3b	65	13	1844
One flash. lt., 10 secs.	18 24.1					1864
Mouillé Point	33 53.9	Tower, 80 ft. high, in black & white bands, on pt., 1,200 yds. E. by S. $\frac{1}{2}$ S. from Green Pt. lt.	4a	44	10	1844
One fixed red light	18 24.7					1864
Cape Town	.....	One on S. wharf, only in northerly gales; the other on E. end of breakwater. Shown eastward from N. by the E. to S.	6a	..	..	1801
Two fixed green lts.			..	25	..	1863
CAPE OF GOOD HOPE	34 21.2	White iron tower, 30 ft. high, on the cape. Visible all round seaward, except when hidden by Vasco de Gama Peak, betw. N.N.W. $\frac{1}{2}$ W. and N.N.W. $\frac{1}{4}$ W. These bearings lead S.W. of Albatros Rock, from 1 mile to $\frac{1}{2}$ mile clear of it. A Signal-station near. Observe the distinctions betw. this and Green Point lt....	1b	816	36	1860
One rev. br. lt., 1 min.	18 29.5					
SIMON'S BAY						
South Roman Rock	34 10.7	Tower, 48 ft. high, with broad red and white bands. The outer, or Castor Rock, lies N.N.E. $\frac{1}{2}$ E., $\frac{1}{2}$ cable from it.	3b	54	12	1845
One rev. br. lt., $\frac{1}{2}$ m.	18 27.5					1861
CAPE AGULHAS	34 49.8	Tower, 100 ft. high, white & red bands, on pt. Coming from eastward, keep outside a bearing of it of W. by N., if beyond 6 or 7 miles	1a	128	18	1848
One fixed bright light	20 0.6					
Cape St. Blaize	34 11.2	Square tower, 45 feet high, on bluff of cape. Keep the lt. in view when standing in-shore	3a	240	15	1864
One fixed red light	22 9.5					
CAPE ST. FRANCIS	34 12.5	Stone tower, 91 ft. high, 250 yds. within Seal Pt., $\frac{1}{4}$ mile W. of Cape St. Francis. Obscured by Cape St. Francis N. of N. 83° E....	2b	118	16	1877
Flashing lt. ev. 20 secs.	24 50.3					
ALGOA BAY						
CAPE RECIFE	34 1.7	Tower, 80 feet high, with four red and white bands. A red ray to clear Roman Rock. Shown between N. by E. and N.E. $\frac{1}{2}$ N....	1b	93	15	1850
One rev. br. lt., 1 m.	25 42.2					
Baakon River	.....	A green light on the bridge	..	..	..	1869
Fort Elizabeth	33 57.7	Tower, 55 ft. high, on hill behind town, near Donkin Monument. Lt. is red from S.E. to S.E. by E., thence bright to N.E. by E. Bright lt. in sight clears all dangers. A time ball here. Be cautious not to mistake this for Cape Recife lighthouse.....	6a	225	12	1861
One fixed light	25 37.					
Bird Islands	33 50.4	Stone-coloured tower, 72 ft. high. Not to be approached within 3 miles from outside.....	3a	80	10	1853
One fixed red light	26 17.2					1873
Port Alfred	33 36.1	From near the extreme of the West pier	..	..	6	1873
One fixed green light	26 54.2					
Buffalo River	33 1.1	East London. Red and white bands, 13 feet high, on reef, S. side of entrance	6a	45	12	1860
One fixed bright light	27 55.1					
PORT NATAL	29 52.8	White tower, 81 ft. high, on the bluff at the entrance	2b	282	24	1867
One rev. br. lt., 1 min.	31 3.6					
Light proposed		Harbour light proposed on end of wall	..	..	..	....
DELAGOA BAY						
Cockburn Shoal	25 55.3	Lt.-ves. is moored W. by N. $\frac{1}{2}$ N. $\frac{3}{4}$ miles from Elephant Id., and 9 cables from nearest part of Cockburn Shoal. She is painted red, carries two masts, and shows a fixed br. lt.	..	..	..	1878
	32 54.5					
Reuben Point	25 58.8	Lt.-ho. on Reuben Point, on Ponta Vermelha, N. side of entrance to English River. Visible southwards betw. N.E. by E. $\frac{1}{2}$ E. & W. $\frac{1}{2}$ N.	a	..	..	1877
One fixed bright lt.	32 38.4					
Inhambane River	23 45.5	White tower, on E. point of Barrow Hill, S. side of entrance. Light shown seaward to between S.E. $\frac{1}{2}$ S. and W. by N. $\frac{1}{2}$ N. ....	..	80	14	1873
One fixed bright light	35 33.2					
Chingani Point	20 38.2	Vis. betw. N.N.W. & E. by S. $\frac{1}{2}$ S. On N. pt. of Chuluwan Island	..	36	12	1876
One fixed red light	34 54.					
RIVER QUILLIMANE	18 1.3	White iron tower on Tangelane Point, E. side of entrance. Shown seaward from S.W. by W. $\frac{1}{2}$ W. by the South to N.E. by E. $\frac{1}{2}$ E.	a	52	12	1874
One bright fixed light	37 1.5					
MOZAMBIQUE HARB.	15 2.	1. From square tower, N.E. pt. of St. George Id.	a	66	15	1876
1. One fixed br. lt.	40 49.1	2. From iron scaffolding on Fort St. Sebastian. Vis. seaward betw. N.E. $\frac{1}{2}$ N. and S.W. $\frac{1}{2}$ S.	..	74	12	1876
2. One fixed red light		3. At Cabeceira Grande. Vis. over South Channel and up harbour.....	..	35	12	1876
3. One fixed br. lt.		4. Shown on Custom-house pier	..	19	..	1876
4. Two green lights						
QUERIMBA IDS., Ibo Id.	12 20.	Tower of iron and wood, on the N.E. point of Ibo Island, Mozambique Channel. Shown east from S. $\frac{1}{2}$ W. to N.W. by N.	a	51	12	1873
One bright fixed light	40 40.					

Name and Character of Light.	Lat. S. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
REUNION, or BOURBON ISLAND						
St. Denis Two fixed bright lts.	20 51.5 55 30.2	Vertically, 12 ft. apart; on a flagstaff on the Barachois .....	..	85	8	1846
St. Paul Bay One fixed light	20 59.8 55 19.3	Lantern on mast at landing-place .....	..	72	7	1849
BEL-AIR One fixed bright lt.	20 53.2 55 39.4	Tower, 66 ft. high, on the point, N.W. side of the island	2a	151	18	1846
MAURITIUS						
GRAND PORT One fixed light	20 24.3 57 47.1	White tower, 84 ft. high, on Ile aux Fouquets. Pilot station	1a	108	16	1864
Port Louis Lightvessel One bright revol. lt.	20 8. 57 29.	In 15 fathoms, at the entrance. Flashes every ½ minute; near bell buoy anchorage	●	34	9	1867
Canonnier Point On fixed br. & red lt.	19 59.7 57 32.5	Br. lt., but appears red in-shore of S.W. ½ W. .....	..	38	10	1855
FLAT ISLAND One rev. br. lt., 1 m.	19 52.6 57 39.1	White tower, 53 ft. high, on S.W. angle of the island	●	365	25	1855
SEYCHELLES (Port Vic- toria)	4 36.7 55 31.	Lt.-ho. of coral, painted white, 42 ft. high, on N.W. point of Southern Reef, entr. to Port Victoria. Red lt. shown betw. N. and S.E. ½ S., except where obscured by islands. Red light also shown over anchorage	●	37	9	1877
COMORO ISLANDS	12 46.7	One fixed bright light on Mayotta Jetty .....	..	..	..	....
MADAGASCAR	.....	Proposed lts. at St. Mary's and Baleines Port .....	..	..	..	....
GULF OF ADEN						
Port Berberah Lighthouse building	Lat. N. 10 25. 44 59.5	On S. shore of p. rt. S. by W. ½ W. 1½ mile from Tamar Pt. To show h.x. br. lt. Kept open eastward of S. clears Tamar Spit	4a	76	14	....
ADEN 1. One bright fix. lt. 2. One fix. bright lt.	12 45.4 45 4.	1. Dark stone tower, 69 ft. high, on the E. ex- treme of Ras Marshih	1a	244	20	1867
		2. From light-ves., painted red, with red ball; in 24 ft., S. side of inner harbour; a gun and blue lts.; bad light .....	..	35	7	1850
RED SEA.						
PERIM ISLAND One rev. br. lt., 1 min.	12 40.3 43 25.	At 1,100 yds. S.W. of N.E. bluff. Shown all round horizon. Flashes every minute	2b	241	25	1861 1871
DÆDALUS SHOAL One fixed bright light	24 55.5 35 52.	An open iron-work structure, painted red, 70 ft. high, near S.E. extreme	2a	61	14	1862
El Weg (Sherm Wej'h) One fixed bright light	26 13. 36 27.	E. Coast, Red Sea. Lt. shown from lt.-ho. on E. side of entrance to harbour .....	..	106	14	1875
Brothers Islets Lighthouse building	26 22.5 34 49.	Lighthouse building .....	..	..	..	....
JUBAL STRAIT One revolving bright lt.	27 47.5 33 42.3	On Ushrufee, or Ashrafi Reef	1b	140	18	1862
ZAFARANA POINT One fixed bright light	29 6.3 32 44.	Stone tower, 82 ft. high, on the point	1a	83	14	1862
RAS GHARIE One bright fixed light	28 21. 33 7.	Red tower .....	..	165	20	1872
Suez Lightvessel One fixed bright light	29 53.5 32 32.9	West of Newport Rock, painted red. Vessels must pass to westward of her .....	..	52	12	1853
SUEZ CANAL						
Bitter Lake Two bright fixed lts.	.....	One bright fixed lt. at S. entrance .....	..	40	..	....
		One at N. entrance .....	..	40	..	....
Ismailia	.....	One red fixed lt. at Lake Timsah .....	..	..	..	....

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
INDIA (West and Malabar Coasts).						
KURRACHEE	24 47.3	1. To supersede fixed lt. on Manora Pt. New white round tower, 52 ft. high, adjoins S.W. bastion of Manora Fort.....	1b	150	20	1877
1. Rev. br. lt. ev. 2 m.	66 58.3	2. Shown on the extremity of Manora break-water in fine season only				1875
2. One fixed red light						
Mandavee	22 49.7	Entrance to Gulf of Kutch; on S.W. bastion of fort	4a	147	16	1853
One fixed bright light	69 20.4					
Beyt (Bate) Harbour	22 29.	Lt.-ho. of stone, 18 ft. high, on N.E. end of Sainia Island. Lt. vis. through arc of 180°	4a	35	11	1876
One fixed bright light	69 4.5					
Dwarka Point	22 14.	Kattywar Coast. Square stone tower, 40 ft. high, 117 yds. within high water line.....	..	70	10	1875
One fixed bright light	68 57.					
Pur Bunder	21 37.2	From tower on town wall	4a	85	15	1876
One fixed bright light	69 35.					
Verawal	20 53.5	Stone tower, 40 ft. high, on pier, N.W. side of harbour. Lt. vis. over arc of 180°	4a	56	13	1876
One fixed bright light	70 22.					
CAMBAY GULF						
Perim	21 35.9	White stone lighthouse, 78 feet high, on the island, W. side of the gulf	4a	128	17	1851
One bright fixed lt.	72 23.6					1867
Gogah	21 40.4	At N.E. angle of town. An indifferent lt.....	..	..	10	1856
One fixed light	72 15.1					
Koon Bunder	22 17.	On a mast, on W. bank of Sabermutti River. Sept. 1 to June 15 .....	..	48	10	1856
(One fixed bright lt.	72 18.3					
Deejugan, or Tankaria	21 55.	On a mast, on N. bank of Dhardur River. Sept. 1 to June 15 .....	..	50	10	1856
One fixed bright lt.	72 30.5					
Bogwa, or Dandi	21 19.7	On a low point, on E. side of gulf.....	..	..	10	1856
One fixed bright lt.	72 35.					
TAPTI	21 5.	Stone tower, 91 ft. high, red & white bands, on N. shore of Surat River, near Vaux's tomb	4a	100	15	1852
One bright fixed lt.	73 38.					1867
Umarsari	20 31.5	At the entrance to the Par River .....	..	..	..	....
Beacon light	72 53.					
BOMBAY						
Kolaba Lightvessel	18 50.	In 6 fathoms, 4½ miles S.S.W. from Kolaba Point. Painted red, with red ball. A blue light every hour, and torch lt. every ½ hour. Red flag when vessel is seen	●	36	9	1842
One rev. red lt., flash every 20 secs.	72 46.8					
Shannon or Inner Lt.-V.	18 53.5	½ mile S. of Shannon sunken rock. At 4½ miles N.E. ½ N. from outer lightvessel. Red flag when a vessel is seen	●	..	10	....
One fixed bright lt.	72 50.					
S.W. PRONG	18 52.7	Lighthouse on S.W. Prong, 1½ mile from Kolaba Point; is painted with white, red, white and black horizontal bands.....	1b	140	18	1874
One br. rev. lt., 10 s.	72 47.5					
Dolphin Rock	.....	Stone tower on the rock. Lt. is green betw. S. & E., br. betw. E. and N.E. by E. ½ E. (over British Mail S.S. anchorage), & green betw. N.E. by E. ½ E. and N.N.W. ½ W. ...	5a	20	2	1857
One fix. br. & green lt.						1878
Tourbah	.....	Fixed light on Custom-house pier .....	..	..	..	1866
KHUNDARI ISLAND	18 42.3	Octagonal tower, 75 ft. high, on Khundari or Kennery Island, S. of Bombay Harbour. A flagstaff to N.E. ½ N. from the tower	1a	161	20	1867
One bright fixed lt.	72 48.8					
BUTNAGHERRY	16 59.5	White column, 37 ft. high, on an old fort on the bluff headland. Anchorage in 7 or 8 fms., at 1 mile to S.W.	3a	300	18	1867
One fixed red light	73 15.8					
Rajapur River	16 36.1	Lt.-ho., 21 ft. high, on Keeya Hill, near S. pt. of Rajapur River. Not exhibited betw. June 11 and Sept. 9	6a	75	9	1873
One fixed bright light	73 18.5					
Malwan	.....	1. Shown on the beach..... 2. Shown from boat, S.E. of rock, at entr. of port. Entering, keep green light just open southward of red lt., and anchor with Vingorla Rock light bearing S. ½ W. ....	..	20	..	1878
1. One fixed green light						
2. One fixed red light						
Vingorla	15 51.3	21 feet apart. Not shown in S.W. monsoon, between June 15 and Aug. 31.....	6a	250	10	1869
Two bright fixed lights	73 36.2					
VINGORLA ROCKS	15 53.3	On outer Burnt Island, 9½ miles W. by N. from Vingorla Point	4a	110	12	1870
One bright fixed light	73 26.7					

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GOA One revolving bright lt.	15 29.4 73 45.7	Tower, 40 ft. high, on Aguada Fort, on a hill above the landing-place, about a mile from the outer port.	..	280	12	....
SEDASHIGUR BAY 1. One fixed bright lt. 2. One <i>red</i> fixed light	14 49.2 74 2.7	1. Granite tower, 45 ft. high, on outer Oyster Rock 2. Red lt. from window of the Post-office, near Koney Hill, at Port Karwar.....	1a	205	25	1865
Cumta One fixed light	14 25. 74 22.5	A lantern on a column, 65 ft. high, on the hill at the mouth of the creek .....	..	180	10	1855
MANGALORE One fixed bright light	12 52.2 74 49.5	White tower, 50 ft. high, on a hill above the town, at $\frac{1}{2}$ mile E.N.E. from the entrance to the river	4a	240	11	1870
Cannanore One fixed <i>red</i> light	11 51.3 75 21.7	On a flagstaff in the fort. Not shown during S.W. monsoon.....	6a	110	12	1843 1871
Tellicherry One fixed bright light	11 44.8 75 28.5	On a flagstaff in the fort. Shown from N.W. by W. to S.E. by S. Not shown during S.W. monsoon.....	..	112	8	1835 1846
Calicut One fixed bright light	11 15.2 75 45.6	On a white column, 110 ft. high, near the beach. Shown westward, from N.W. to S.S.E. Buoy marks 8-feet rock, 1 mile off shore, S. by E. $\frac{1}{2}$ E. from lighthouse. Not shown during S.W. monsoon, May 16 to Aug. 10	4a	105	12	1847
Narrakel One fixed bright light	10 2. 76 13.5	From flagstaff; shown only during S.W. monsoon, from May 15 to Sept. 30 .....	..	..	..	....
COCHIN One bright fixed light	9 57.8 76 14.7	Stone tower, 89 ft. high, near the beach, S. side of the entrance. Best anchorage in $\frac{5}{8}$ to 6 $\frac{1}{2}$ fathoms, at from 2 to 2 $\frac{1}{2}$ miles W. of the light	4a	95	14	1868
ALIPEY One rev. br. lt., 1 min.	9 30. 76 19.	White brick tower, 90 ft. high, on the sandy beach	2b	100	15	1862
Kadiapatam Point One fixed bright light	8 7.5 77 18.	Tower, 16 ft. high, on Kadiapatam, or Mutam Point. Crocodile Rock S.W. $\frac{1}{4}$ S. 2 $\frac{1}{2}$ miles...	..	85	12	1875
Comorin Cape <i>Building</i>	8 5.2 77 32.5	Lighthouse building for revolving light	4b	..	..	....
Minicoy Island <i>Proposed</i>	8 17. 73 3.	Proposed lighthouse .....	..	..	..	....

CEYLON.

COLOMBO One fixed bright light	6 55.9 79 50.9	In clock tower, in the centre of the fort.....	2a	134	20	1860 1867
POINT DE GALLE One fixed bright light	6 1.4 80 12.5	White tower, 80 ft. high, on S. bastion. Lifeboat	..	100	12	1848
GREAT BASSAS ROCK One rev. <i>red</i> lt., $\frac{2}{3}$ min.	6 10. 81 28.4	Lt.-ho. has conical roof and one gallery at top of tower. Fog-bell sounded once ev. 15 secs.	1b	110	16	1873
LITTLE BASSAS ROCK One flashing bright lt.	6 23. 81 43.	Lt.-ho. has dome roof and two galleries at top of tower. Lt. shows two flashes once ev. min. Fog-bell sounded, 2 strokes once ev. $\frac{1}{2}$ min.	..	110	16	1878
Little Bassas Lt.-Ves. One br. rev. lt., $1\frac{1}{2}$ min.	6 23.3 81 43.3	Inside the reef, N. by E. $\frac{1}{4}$ E., $\frac{1}{2}$ mile from centre rock	●	38	10	1863
Batticaloa River One fixed bright light	7 43.8 81 41.3	Exhibited at river entrance while it is open, betw. Feb. 15th and Oct. 31st.....	..	50	..	1878
TRINCOMALIE Foul Point One br. rev. lt., $\frac{1}{2}$ m.	8 32.2 81 18.8	On the S. side of the bay. Eclipses not total within 7 miles	2b	104	17	1864
Round Island One bright fixed lt.	8 31.5 81 17.8	On the West side of the bay	4a	..	10	1863

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
COROMANDEL COAST.						
Tuticorin One fixed bright light	8 47.3 78 11.3	Obelisk, 37 ft. high, on Hare Island, $\frac{2}{3}$ miles East of Tuticorin. Shown eastward, from S. by W. to N. by W.	4a	68	12	1845
PALK BAY One fixed bright light	9 17.5 79 12.6	Round tower, 56 ft. high, 1 mile E. of Paumben Pass	a	97	12	1845
Negapatam One fixed bright light	10 45.7 79 50.2	White tower, 75 ft. high, on bastion	4a	82	12	1846 1870
Karikal One fixed bright light	10 55. 79 50.8	On a flagstaff .....	..	65	8	1853
PONDICHERY One fixed bright light	11 55.7 79 49.9	In the square. Two lts., vertically, are shown from a flagstaff during rebuilding of lt.-ho. ....	..	131	10	1836
MADRAS 1. One fix. & flash. lt. 2. Two fixed red lts.	13 5.2 80 16.5	1. Column, 125 ft. high, on esplanade, N. of fort. Flash ev. 2 min. Keep outside a bearing of S.S.W. $\frac{1}{2}$ W., to avoid Pulicat S. shoals 2. At 6 ft. apart, vertically, & vis. within limits of port. Shown on outer end of N. groin of new harbour works. Vessels should not approach into a less depth than $6\frac{1}{2}$ fathoms ...	..	132	24	1814 1878
Pulicat One fixed red light	13 25.3 80 19.5	A white column, 61 ft. high. When bearing W. $\frac{1}{2}$ N., clears all shoals to northward	4a	73	7	1862
ARNEGON SHOAL One fixed bright light	13 52.8 80 12.	White tower, 107 ft. high, at the village of Moona, or Moonapolum, 1 mile in-shore, and 5 miles W. $\frac{1}{2}$ S. from the shoal	4a	105	16	1858
POINT DIVY One fixed bright light	15 58.9 81 9.5	White column, 43 ft. high, at 2 miles N.W. of Point Divy. Shown eastward, from S. to N.E.	4a	90	12	1851
Masulipatam One fixed light on the flagstaff, in fort	16 9.2	One fixed light on the flagstaff, in fort	6a	69	6	1870
GODAVERY One fix. br. lt.,	16 49.1 82 18.4	Tower, 100 ft. high, black and white bands, $\frac{1}{2}$ mile W. by N. of Godavery Point.	4b	96	15	1817 1868
Cocanada One bright fixed light	16 56.2 82 14.8	At Conara, on N. side of entrance to Cocanada, or Jagernickporam. New lt.-ho. building N. by E. $\frac{1}{2}$ E. $\frac{1}{2}$ m. from present tower (1876) Shown from Dolphin's Nose Hill	●	112	10	1868
Visagapatam Temporary fixed red lt.	17 41.8 83 17.3	Shown from Dolphin's Nose Hill	4a	640	6	1874
SANTIPILLY One fixed bright light	18 3.5 83 36.6	On roof of a house, on Conada Hill, $\frac{1}{2}$ mile in-shore. The rocks lie $6\frac{1}{2}$ miles to S.E. by E. $\frac{1}{2}$ E.	4a	150	14	1849
Calingapatam Point One fixed bright light	18 19. 84 7.5	To clear reef extending off pt., which should not be approached to a less depth than 8 fms.	●	64	8	1877
Gopaulpore One bright fixed light	19 13. 84 52.	On a flagstaff; anchor with light bearing N.W. $\frac{1}{2}$ W. in 8 or 9 fathoms	3a	89	8	1872
Poorce Light proposed	19 47.9 85 49.1	Small lantern-light proposed, from flagstaff, 110 ft. above the sea .....	..	..	..	....
FALSE POINT One fixed bright light	20 20.5 86 47.5	Granite tower, with white star, 2 miles S.W. of point .....	..	120	18	1838
Pilot Ridge Lightvessel One fixed bright light	20 50. 87 41.	Moored in $2\frac{1}{2}$ fms. during S.W. monsoon only. Globe at mast-head, painted in wh. & black horizontal band. Blue lt. and a maroon alternately every half hour.	●	28	12	1851
HOOGLY RIVER East Channel Lt.-Ves. One fixed bright lt.	21 3. 88 15.5	From Oct. to March, in 8 $\frac{1}{2}$ fms. at entr. to E. chan., with maroon or torch ev. $\frac{1}{2}$ hour, and blue lt. ev. hour. From March 15 to Sept. 15 (in S.W. monsoon) is removed to lat. 21° N., with blue lt. ev. $\frac{1}{2}$ hour, & maroon ev. $\frac{1}{2}$ hour	●	28	12	1843
Intermediate Lt.-Ves. One fixed bright lt.	.....	Moored midway betw. lower or E. chan. lt.-ves. & Gaspar lower lt.-ves. Exact position uncertain. Moored temporary, S. by E. $\frac{1}{2}$ E. 12 miles from Lower Gaspar lt.-ves. By day she shows a double triangle from mast-head	..	28	10	1877
Gaspar Lower Lt.-Ves. One fixed bright lt.	21 26. 88 7.	In Gaspar Chan., in $3\frac{1}{2}$ fms., 8 leagues N. by W. from intermediate lt.-ves. Blue lts. and maroons alternately. Fog-gun at the hour and half hours .....	..	28	10	....
Gaspar Upper Lt.-Ves. One fixed bright lt.	21 31. 88 3.	In $3\frac{1}{2}$ fms. S. by E. $\frac{1}{2}$ E. from Saugor lt.-ho., & N.W. by N. from Lower Gaspar lt.-ves. Fog-gun at the first and third quarters of the hour	●	26	8	....

The Hoogly lightvessels all show riding lights on fore-stay; and when out of position the usual lights are not shown, but only a red light at stem and stern. By day, when out of position, mast-head marks are struck. Rockets are fired when assistance is needed from shoals.

Name and Character of Light.	Lat. N. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SAUGOR ISLAND One br. rev. lt., 20 s.	21 38.5 88 3.8	Iron tower, 82 ft. high, on Middleton Point. Electric telegraph to Calcutta .....	..	88	15	1848 1852
COWCOLLY One fixed bright light	21 50.2 87 57.8	Two miles S.W. of Kedgeree Point; used as a guide for anchoring .....	..	52	12	1810
Mutlah River Light-ves. One fixed bright light	21 4. 88 48.	In 11 fms. Globe, painted red and white hori- zontally, at mast-head. From Mar. 16 to Oct. 16, a rocket at 8 p.m., midnight, and 4 a.m.	..	30	7	1857 1875
BAY OF BENGAL.						
Chittagong River Two bright fixed lts.	22 10.8 91 48.5	Shown from wh. beacons, 1½ mile S. of river entr., 40 yds. apart N.W. by W. ½ W. and S.E. by E. ½ E., eastern light higher than western. Approach with lts. E. ½ N., and anchor in 5 fms. 2½ miles distant from them	..	..	..	1866 1878
KOOTUDEAH ISLAND One fixed bright light	21 53.5 91 52.8	Tower, 106 ft. high, on W. part of the island	..	120	7	1846
OYSTER REEF One fixed bright light	20 5. 92 39.	Pile lighthouse, in 4 fathoms.....	2a	77	15	1876
ARRACAN, or AKYAB RIVER One fix. & flashing lt.	20 5.3 92 55.6	Tower, 50 ft. high, on Great Savage Island, S. entrance of Akyab Harbour. Flash every minute	3c	99	13	1844
Terribles Rocks <i>Proposed</i>	19 22.5 93 17.	Proposed on S. rock, off Kyouk Phyou .....	..	..	..	....
ALGUADA REEF One br. revol. lt., 1 m.	15 42.5 94 14.	A noble granite tower, 160 ft. high, on reef, off Cape Negrais, S.W. of entrance to Bassein River	1b	144	20	1865
Krishna Shoal Lt.-Ves.	15 36.3 95 34.5	Moored in 9 fms. water, 8 miles E.N.E. of late position of lt.-ho. Blue lt. shown ev. ½ hour, and maroon at intermediate quarters .....	..	..	..	1878
ANDAMAN ISLANDS One bright fixed light	14 12.5 93 17.8	Iron tower, 91 ft. high, red and white bands, on Table Island, the northernmost of the Coco Islands. Shown from S. by W. to S.S.E. ½ E., the rest hidden by Great Coco Island.....	1a	195	22	1867
RANGOON RIVER						
CHINA BUCKEER One fix. & fl. lt. 1 m.	16 15.5 96 6.3	Pile lt.-ho., in 12 ft. Lt. vis. seaward betw. S.W. by W. ½ W. to N.E. by E. ½ E.	1c	78	15	1870 1876
EASTERN GROVE One fixed bright lt.	16 29. 96 26.5	Screw pile lighthouse, E. side of entrance to Rangoon River. Lt. visible between N. and N.E. by E. ½ E.	3a	93	15	1870
DOUBLE ISLAND One fixed bright light	15 52.5 97 36.2	Shown westward, from N.N.W. to S. ½ E. Kept in sight avoids danger. A strip of light shown from Patch buoy to Amherst Point	1a	134	19	1866
PULO BRASSE 1. Revol. lt. ev. min. 2. Auxiliary red fix. lt.	5 45.3 95 4.2	1. White tower, 120 feet high, upper part red, on N. pt. of Pulo Brasse, near Acheen Head. Lt. vis. betw. W. ½ S. by N. & E. to S.E. ½ E. 2. Shown below principal lt. Vis. N.W.-ward betw. N. by W. ½ W. and W. by S. ½ S.	1b 4a	525 430	30 8	1875 1876
MALACCA STR. Lt.-ho. One br. rev. lt., 1 min.	2 52.1 100 59.	A screw pile tower, standing in 15 ft. water, on W. part of the 1-athom bank, painted in belts of red and slate colour .....	..	61	13	1874
PULO LUMAUT One fixed bright light	2 52.8 101 14.3	From wooden framework, on S.W. extr. of id., at entr. of Lumaut Strait. Shown betw. S. by E. and S.W. by W. ½ W. ....	..	30	10	1878
RACHADA CAPE One fixed bright light	2 24.8 101 51.2	Round wh. tower, 78 ft. high, on cape. Shown westward, from N.W. by W. to S.E. by E.	2a	466	25	1863

Name and Character of Light.	Lat. N. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
MALACCA						
One fixed bright light	2 12.2 102 15.5	On St. Paul Hill, N.E. side of the Strait of Malacca. A red lt. is shown on the pier-head	..	180	16	1849
Pulo Pisang	.....	Lt.-ho. constructing, to show lt. betw. S.E. by E. $\frac{1}{2}$ E. & N.W. $\frac{1}{2}$ N. through S. and W.....	..	..	..	....
RAFFLES						
One fixed bright light	1 9.9 103 44.8	White tower, 91 ft. high, on Coney Islet, Strait of Singapore. Shown southward, from N.W. by W. to E.N.E. ....	..	105	12	1855
Singapore						
One fixed bright light	1 17.7 103 50.9	On flagstaff in Fort Canning, on Government Hill. Seen between St. John's Island and Johore shoal .....	..	226	15	1855
HORSEBURGH, or Pedra Branca						
One rev. br. lt., 1 min.	1 20. 104 24.5	White tower, 93 ft. high, on summit of rock...	..	95	15	1851
RHIO STRAIT						
Little Garras Island						
One bright fixed lt.	0 46.1 104 21.4	On the eastern hill in the centre of the island, on W. coast of the strait .....	..	118	8	1867
Terkolei						
One bright fixed lt.	0 58.7 104 19.6	On the W. end of the island, on E. coast of the strait .....	..	31	6	1867
Sauw Island						
One bright fixed lt.	1 4.6 104 10.2	On E. extreme of the island .....	..	118	8	1867
SUMATRA and JAVA.						
Benkoelen						
1. One fixed light	Lat. S. 3 47. 102 19.	1. At Pulo Tikoes .....	..	39	8	....
2. One <i>red</i> fixed light		2. At Tapu Padrie. Shown seaward, from N. to W. by S. ....	..	59	3	....
Padang Roadstead						
<i>Proposed Lights</i>	1 50. 100 35.	Sumatra (W. Coast). 1. On Pulo Padang, to show white seaward, & a narrow red sector towards land, betw. E. $\frac{1}{2}$ S. & E. by S. $\frac{1}{2}$ S. 2. On S.W. pt. of Pulo Pisang Besar. Br. lt. visible seaward	2a	..	20	....
		3. A br. lt. on N.W. side of Apenberg, entr. of Padang River. Shown from W. through N. to shore of Padang River	6a	..	10	....
TJILATJAP						
One bright revol. lt.	7 44.7 109 1.6	On Tjimiring Hill, on Kounbangan Island, S. Coast of Java. Flash every minute.....	3b	655	20	1870
SUNDA STRAIT						
Flat Point	6 2. 104 26.	N.W. entrance point of Sunda Strait. Flashing lt. to be shown, giving 3 flashes in quick succession ev. 1 min., followed by short eclipse .....	..	..	..	....
Telok Betong						
One fixed <i>red</i> light	5 28.3 105 16.	Head of Lampong Bay, S. Coast of Sumatra. From standard on white stone pedestal at extreme of landing-stage.....	6a	56	9	1876
FIRST PT. (Java Hd.)						
One rev. bright lt.	6 44. 105 11.5	Stone lt.-ho., painted white. Catadioptric lt. by lenses and reflectors. Shows a flash of 6 secs., and is obscured for 24 secs. in ev. $\frac{1}{2}$ m.	●	315	25	1877
Fourth Point						
Two fix. bright lts.	6 4.5 105 53.	Red tower, 35 ft. high, $2\frac{1}{2}$ miles to S.W. by W. of the port. A second lt. shown in the direction of the telegraph cable from the point to Hog Point, Sumatra.....	2a	151	20	1855
		On the western pier .....	..	..	8	1872
Anjer						
One fixed <i>red</i> light	6 3.2 105 55.	On the western pier .....	..	23	4	....
Monscheneter Island						
	106 30.8	Building for flashing light	3c	..	..	....
Great Kombuys Island						
One fixed bright light	5 55.5 106 34.5	On N.W. point of island	6a	..	9	1878
Middleberg Island						
	106 41.2	Proposed red lt. on S. point	4a	..	..	....
Rotten Island						
	.....	Proposed on the jetty	6a	..	..	....
Edam Island						
	106 50.2	Proposed light	2a	..	..	....
BATAVIA						
One fixed bright lt.	6 5.1 106 47.7	On the West pier. When bearing between S. $\frac{1}{2}$ W., and S. $\frac{1}{2}$ E., leads to the anchorage	4a	51	13	1862
RACKIT, or BOOMPJES ISLAND						
One bright rev. light	5 54. 108 20.	An open iron-work tower, 164 ft. high, on the southernmost island	1b	175	23	1872

Name and Character of Light.	Lat. S. Long. E. .	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Cheribon One light	6 45. 108 34.	On the outer end of the N. mole, to show the roadstead	a	28	8	1867
Tugal	.....	Red light proposed	6a	..	..	....
Carimon-Java Islands <i>Proposed</i>	5 47. 110 6.7	Proposed revolving lt. on Katang, or Western Island .....	..	..	..	....
NORTH WATCHER One bright fixed light	5 13.5 106 26.5	Iron tower, white, on the island. Flash every minute	2b	159	20	1869
Pekalongan One fixed bright lt.	6 54.5 109 43.	On the W. side of the river, to mark the road off it	a	26	8	1866
Samarang One bright fixed lt.	6 57.8 110 24.2	Harbour lt., when works are completed.....	6a	..	8	1872
Japara	110 42.4	Red light proposed on Jalle Point	6a	39	..	....
SOURABAYA STR. Lt.-v. One fixed bright light	6 57.5 112 38.2	Painted yellow; in 5 fathoms, at N. entrance	6a	21	8	1872
Kresik or Grissac One bright fixed lt.	7 9. 112 40.	At the harbour in Sourabaya Strait	6a	42	10	1872
MADURA STRAIT One fixed and flash lt.	7 28. 113 7.	On the Zwantjes or Koko Reef. Fixed light, with flash every 2 minutes. Fog-bell.....	..	54	14	1871
Meinders Reef	114 22.5	Pile lighthouse building, to show fix. bright lt.	..	56	12	....
Joana	.....	Bright light proposed on iron post .....	..	..	..	....
Passaroean	112 55.	Fixed red lt. reported shown on iron post	6a	39	..	....
Probolingo	113 10.5	Fixed red light proposed on iron post	6a	39	..	....
Besoeki	113 40.	Fixed bright lt. reported shown on iron post...	6a	39	..	....
Pasaruekan	113 56.	Fixed red light reported shown on iron post...	6a	39	..	....
BALY ISLAND 1. One bright fixed lt. 2. One fixed red light	8 2.5 114 27.	1. Open iron-work tower, 30 ft. high, on Tabuan Duiven, or Gilboa Island, N. entr. to strait	4a	55	15	1872
Banjoewangie One bright fixed lt.	8 12.3 114 20.2	2. At Sangait (Pabejan), N. coast of Baly Id. On Utrecht Fort, in Baly Strait. Bearing W. clears all dangers	6a	41	8	1865
Timor Island One bright fixed light	8 33. 125 37.	At Dell, N. coast of Timor .....	..	..	..	1867
Koepang	.....	S.W. coast of Timor Island. Fixed red light proposed from iron post	6a	39	..	....
BANKA STRAIT Lucipara Chan. Lt.-V. One bright fixed lt.	3 6. 106 6.2	In narrowest part of S. entrance of channel; is painted yellow. One mast, with black ball	6a	28	9	1870
Tobu Ali	3 1.	Proposed in the fort .....	..	..	..	....
Frederic Hendrik	1 58.2	Lightvessel said to be preparing .....	..	..	..	....
Mintok	2 5.5	One fixed bright light on end of pier	6a	29	8	1865
Pulo Dahan Lt.-Ves.	2 55.	Proposed, $\frac{1}{2}$ miles S. of islet, in Stanton Chan.	..	..	..	....
TANJONG-KALIAN	2 4.6	Fix. lt. from white tower, W. end of Banka Id.	2a	170	20	1862

Name and Character of Light.	Lat. S. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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MACCLESFIELD CHANNEL

Pulo Lepar One bright fixed lt.	2 56.5 106 55.	On Tanjong Laboe, E. point of island, in Mac- clesfield Channel.....	6a	39	8	1870
Jelaka Island One bright fixed lt.	2 50.5 107 1.5	On W. side of Pulo Leat, in Macclesfield Chan- nel. Shown seaward, from N.E. by N. to S.S.E. ....	..	39	8	1870
SARAWAK RIVER One bright fixed light	1 43.8 110 30.5	Light-yellow tower on Po Point, Maratabas entrance of Sarawak River.....	..	490	14	1873
Mukah One fixed bright light	.....	N.W. Coast of Borneo	3	..	7	1878
Kidurong Point One fixed bright light	.....	N.W. Coast of Borneo	3	..	7	1878
MAKASSER 1. One fixed bright lt. 2. One fixed bright or red light	5 8.2 119 23.5	1. A white tower on Fort Rotterdam, on Oed- jong Pandang 2. Half a mile S. of Losari Monument. Lt. is bright, but is red in fairway coming from S. and W. Approach it on a N.E. by N. bearing .....	..	47	10	1861
Gorontalo	Lat. N. 123 12.	East coast of Celebes. Red light proposed ...	6a	26	..	....
Balabac Island One bright fixed light	8 1. 117 1.2	Square white tower, on S. part of Pto. Prin- cipe Alfonso, or Colandorang Bay, E. coast of Balabac.....	5a	268	12	1865

PHILIPPINE ISLANDS.

Samboanga One fixed red light	6 54. 122 4.2	At the extremity of the mole, Island of Min- danao.....	..	35	5	1866
Zebu Port One fixed bright light	10 24. 123 59.4	On Bagacay Point, N.E. entrance .....	..	46	4	1857

BOMBLON ISLAND

Sabang Point One fixed bright lt.	12 36. 122 17.1	Stone tower .....	..	..	..	1857
Off Sabang beacon	.....	One bright fixed light .....	..	..	..	1866
Off Agbatan beacon	.....	One bright fixed light .....	..	..	..	1866
Off Binagon Pt. beacon	.....	One bright fixed light .....	..	..	..	1866
Off Rosas Pt. beacon	.....	One bright fixed light .....	..	..	..	1866

MANILA BAY

CORREGIDOR ID. One rev. br. lt., 1 m.	14 23.1 120 33.5	Tower, 60 ft. high, on summit of the island in the entrance to Manila Bay.	2b	639	20	1853
West Mole Head	.....	A white tower, with bright fixed light .....	..	..	..	1866
Caballo Island One fixed bright lt.	14 22.5 120 36.	On N.E. part of islet, which hides it seaward. Also marked northward from N. $\frac{1}{2}$ E. to N.W. by W. $\frac{1}{4}$ W.	4a	27	6	1853
Manila 1. One fixed red lt. 2. One fix. green lt.	14 36.1 120 57.3	1. N. side of entrance, River Pasig..... 2. Red iron tower on battery of S. mole, en- trance of Pasig River	6a	51	8	1846
Cavite One fixed bright lt.	14 30. 120 54.	On Sangley Point .....	..	29	7	1864

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BURIAS ISLAND						
Busin Harbour Three br. fixed lts.	13 8. 122 55.	One at N. entrance, one at W. entrance, one at the end of the bank. Brought in one, they lead through the channels.....	..	28	8	1864
Busainga Harbour One fixed blue light	13 7.5 123 15.	On Pedras Point, on N.W. coast, 8 miles S. of Anima Sola Rock .....	..	28	8	1864
Malaguig-Gilog Har- bour One fixed blue light	12 55. 123 0.	On S.W. coast. A square tower N.W. of Sibugan Island .....	..	28	8	1864
Boca-Engano Harbour One fixed bright lt.	12 49. 123 10.	A square tower on the outer point .....	..	28	8	1864
CHINA, &c.						
BANGKOK RIV., Siam One bright fixed light	13 29.4 100 35.3	Screw pile lt.-house on the edge of the bank, inside the bar, at the entrance of the river...	3a	44	11	1874
CAPE ST. JAMES One fixed bright light	10 19.2 107 5.4	On S. height of the cape, $\frac{1}{2}$ of a mile within S. ridge, E. side of Saigon River, S.E. coast of Cochin China. Electric telegraph to Saigon	1a	482	28	1862
Cangion Lightvessel One fixed light	10 36.8 106 51.2	In 5 fms., at elbow of Phuocnhgiang River, $\frac{1}{2}$ miles from Cangion Point .....	..	33	10	1864
Hondau (Dau Shon) Id. One fixed bright light	20 40. 106 47.	S. side of entr. of Cua Cam River. Vis. betw. N. by W. $\frac{1}{2}$ W. and S.W. Uncertain light...	..	164	8	1876
MACAO One bright revol. lt.	22 11. 113 33.5	White tower, 45 ft. high, on Fort Nossa Senhora da Guia, on the Macao Peninsula .....	..	338	20	1865
Ai-chau Island	113 56.	Proposed light .....	..	..	..	....
Canton River Two red fixed lights	.....	One under Dutch Folly Fort; the other on opposite barrier. Guide for steamers .....	..	..	..	1859
HONG KONG ISLAND						
Green Island One fixed light	.....	N.W. end of Hong Kong Id. Shows red from N. by W. $\frac{1}{2}$ W. through W. to S. by W. $\frac{1}{2}$ W.; green from S. by W. $\frac{1}{2}$ W. to S.E., and from N. by W. $\frac{1}{2}$ W. to N.N.E. $\frac{1}{2}$ E.	4a	95	14	1875
Cape D'Agullar One fixed bright lt.	22 12.3 114 15.8	S.E. extr. of Hong Kong Id. Stone tower, 57 ft. high. Visible betw. N.E. and S.E. $\frac{1}{2}$ E.; S.E. $\frac{1}{2}$ S. and S.S.E.; S.W. by W. and W. by S. $\frac{1}{2}$ S.; and over Tathong Channel. In other directions obscured by islands	1a	198	23	1875
Cape Collinson One fix. red & br. lt.	.....	White to eastward from N.N.W. to S.S.E., & red to westward. Approaching Victoria Harbour keep in white light	6a	200	8	1876
Pratas Shoal Breaker Point	116 43.4 116 28	Proposed light on western part .....	..	..	..	....
HIGH LAMOCK ID. One bright fixed light One red fixed light	23 14.8 117 17.5	Black cast-iron tower, 54 ft. high. The lower red fixed light on the slope of the island is shown to between S.W. by S. and S.W. $\frac{1}{2}$ W., covering the White and Boat Rocks	1a 4a	241 65	22 7	1874 1874
PESCADORES IDS. One fixed bright light	23 32.8 119 28.2	Iron tower, black, 33 ft. high, on Litsitah Pt., S.W. point of Fisher Island	4a	205	15	1876
CHAPEL ISLAND One bright revol. lt.	24 10.3 118 13.5	Brick tower, painted black, 63 feet high. Flashes every half minute	1a	227	22	1871
AMOY HARBOUR 1. One fixed light 2. One fix. red & br. lt.	24 24. 118 9.	1. Shows from octagonal white tower, 16 feet high, on Taiton Id., near entr. to harbour. Visible from West round by N. to S.E. 2. Red and white striped tower, 33 ft high, on Tuing-seu Id. Red lt. betw. S. & S.E. by E.; white over entr. & up harb. from S.E. by E. to N.W. $\frac{1}{2}$ W.; & red from N.W. $\frac{1}{2}$ W. to W.	●	..	10	1863
OCKSEU ISLAND One br. rev. lt. 1 min.	24 59. 119 28.	Round stone tower, painted black, 64 ft. high, on the West or High Ockseu Island	1b	286	24	....
TURNABOUT ISLAND One bright fixed light	25 26. 119 58.7	Black round tower, 54 ft. high, on Id. off Haitan Id., N. pt. of Formosa Strait. Sunda Rk. lies 3 $\frac{1}{2}$ cables N. of Id., and a rock awash $\frac{1}{2}$ cable S. of it	1a	235	22	1873

Name and Character of Light.	Lat. N. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height Above H. W.	Visible in Miles.	Year established.
MIDDLE DOG ISLAND One br. fix. & flash. lt.	25 58.3 120 2.3	White stone tower, 64 ft. high, on White Dog Islands, Min River entrance. Lt. flashes every $\frac{1}{2}$ min. Shown seaward from W. by N. $\frac{1}{2}$ N. by N. and E. to S.W. $\frac{1}{2}$ W. Obscured by islands to the S.W.	1c	257	22	1873
Pago-la Anchorage One fixed red light	.....	Shown from iron pile lighthouse, with cage ..	..	14	..	1871
YUNG RIVER 1. One fixed bright lt. 2. One fixed red light	29 59.4 121 45.	1. On Tse-le, or Square Id. summit, $\frac{3}{4}$ miles N.E. of entrance. Fog-bell every 15 secs.... 2. Octagonal tower, red and white bands, on Pas Yew Island, western of islets in entrance. Gong sounded in foggy weather	5a	123	5	1865
Video Island	30 8. 122 45.	Light proposed .....	..	..	..	....
WEST VOLCANO ID. One fixed bright light	30 18. 121 55.5	Black stone tower, 33 feet high, on island, in Chusan Archipelago	4a	93	15	1872
NORTH SADDLE ID. One br. rev. lt., 1 min.	30 50.3 122 40.	Brick tower, 25 ft. high, upper part black, lower white, on N.E. extreme. Lt. obscured southward, from S.E. $\frac{1}{2}$ E. to W. by S. $\frac{1}{2}$ S.	1b	273	24	1870
GUTZLAFF ISLAND One bright fixed light	30 47.6 122 10.	At entrance of Yang-Tse Kiang. Signal gun and flag-signals	3a	270	20	1869
YANG-TSE KIANG						
Tung-Sha Lightvessel One br. rev. lt., $\frac{1}{2}$ m.	31 7.7 122 1.	Red, one mast and black ball; Tung-sha on her sides. In $\frac{3}{4}$ fms. on S.W. part of bank, N. by W. $\frac{1}{2}$ W. from Gutzlaff Id. Lt.-house. Warning gun and Commer. Code. Steam fog-horn every 10 secs.	●	40	11	1855
Kiu Toan Lightvessel One fixed bright lt.	31 14.8 121 43.8	Moored in mid-channel N.E. of Kiu Toan beacon. Painted red, with 8 ft. black ball at mast-head while in position. Fog-bell struck three times (3 secs. apart) in every minute...	●	35	11	1878
Kiu Toan Small Beacon One red fixed light	31 18.1 121 39.3	Five miles N.W. from Kiu Toan beacon, from which a light was formerly exhibited .....	..	..	5	1869 1878
WUSUNG RIVER 1. One bright, green, or red fixed light 2. Red and bright lts.	31 23.4 121 29.6	1. Square brick tower, 58 ft. high, on W. side of Wusung entrance. Shows br. from the river bank, N.W. of lt.-ho., to N. 2° E., green betw. N. 2° E. and N. 59½° E., br. over navigable channel betw. N. 59½° E. & N. 72½° E., and red betw. N. 72½° E. and the opposite bank of river	4a	50	10	....
		2. Vertically, upper red, lower br. lt., from lt.-vessel moored on E. side of Outer Bar.....	..	..	..	1878
Sha-wei-shan Island One fixed bright light	31 24.5 122 14.	Tower black, 55 ft. high, dwelling white on summit of island	1a	229	22	1871
Chifu Harbour One fixed bright light	37 34.2 121 31.5	On summit of largest of the Kung Kung Islands, at the entrance, in the Yellow Sea	●	242	22	1867
SHANTUNG PROM. One fixed light	37 24. 122 42.	White stone tower, 64 ft. high. Lt. is bright from N.W. by W. $\frac{1}{2}$ W. to N.N.W. $\frac{1}{2}$ W.; thence red to N. by W. $\frac{1}{2}$ W.; white thence to S.S.W. by E. and S.; and thence red to S.W. $\frac{1}{2}$ W. Obscured by hills from N.W. by W. $\frac{1}{2}$ W. to N. by W. $\frac{1}{2}$ W.; and by island to N.N.W.	1a	200	20	1875
MAITAU ISLAND <i>Proposed</i>	37 54. 120 56.	Light proposed .....	..	..	..	....
SHA-LIEU-TIAN ISLAND <i>Proposed</i>	38 53. 121 33.	Light proposed .....	..	..	..	....
Peiho River Lt.-ves. One fixed bright lt.	38 53. 117 50.5	Moored in 3 fms. $\frac{5}{4}$ mile S.E. of Taku Bar. Bar entrance buoy (red) lies N. 35° W. $\frac{3}{4}$ miles from lightvessel	a	36	10	1878
Idau River Lightvessel One bright fixed light	40 35. 122 0.	In $\frac{5}{4}$ fathoms, 10 miles from entrance. Has 3 masts; baskets on fore and main; signals from mizen, N. coast, Yellow Sea. From April 1 to Nov. 1. Steam Fog-horn ev. 10 secs.	..	33	8	1867

Name and Character of Light	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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JAPAN.

Lightvessels on the Coast of Japan lower their lights when out of position. In thick weather a bell is struck every 5 minutes. Half-hours are regularly struck at all times.

SATANO MISAKI One bright fixed light	30 58.5 130 40.	Iron tower, white, 35 ft. high, on small island off Cape Chichakoff, or Satano-Misaki, S. point of Kiusiu. Obscured landward, from N.N.W. $\frac{1}{2}$ W. to N.E. by E. $\frac{3}{4}$ E.	1b	200	21	1870
NAGASAKI One bright fixed light	32 43. 129 46.	White iron tower, 38 ft. high, on N. point of Iwo-Sima, at entrance to harbour. Masked landward to outside of Mituzse Rocks, from S.W. by S. to E. $\frac{3}{4}$ S. ....	..	205	15	1870 1872
Taske Harbour One bright fixed light	33 23.5 129 33.2	On N. side of entrance .....	..	..	..	....
Yebosi Sima One fixed bright light	33 41 5 129 58.8	White octagonal iron tower, 44 feet high, on summit of Yebosi Island	2a	182	20	1875
TSUNO SIMA (Kado Sima) One flash. lt. ev. 10 s.	34 21.5 130 50.	Granite tower, 100 ft. high, on N.W. pt. of Tsuno Sima, W. coast of Nipon. Lt. vis. seaward betw. S. $\frac{1}{2}$ E. and N.E. by E.	1b	142	18	1876
Niegata One fixed light	37 57. 139 4.	Seldom exhibited .....	..	..	..	1867
Fushiki One fixed bright light	36 47. 137 5.	Toyama Bay. Lt.-ho. of wood, painted white, 33 ft. high, on N.W. side of river entrance. Good anchorage with lt.-ho. S.S.W. $\frac{1}{2}$ W., distant $\frac{1}{2}$ mile .....	..	38	10	1878

SIMONOSEKI STRAIT

Rockuren Island One bright fixed lt.	33 59.2 130 52.4	Granite tower, 25 ft. high, on E. end of island, at W. entrance of strait. Shown from N.E. $\frac{1}{2}$ N. to S. by W. $\frac{1}{2}$ W.	4a	89	12	1872
Isaki One fix. red or br. lt.	33 58. 131 1.	Granite tower, 31 ft. high, on N.E. extreme of point, at W. entrance of strait. Lt. is red Northward and East, from W. by N. to S.E. $\frac{3}{4}$ E.; thence br. to S. $\frac{1}{2}$ W. Bearing N.W. $\frac{1}{2}$ W., on red and bright lts., clears shoals off Motoyama	4a	122	17	1872

Shirosa or Low Reef One fixed red light	33 59.5 130 47.4	Temporary white building on S. end of reef, $\frac{1}{2}$ mile S.W. of Ai-Sima.	42	10	1872
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SETO UCHI or INLAND SEA

Fuku Ura One fixed light	33 57.5 130 56.
ISAKI POINT One bright fixed lt.	33 58.2 131 1.	On N.E. extreme of Kiusiu Island	12	1865
Oka Mura One fixed light	34 10.3 132 52.8	.....	..	..	..	1861
NUBE SIMA One fixed bright lt.	34 23. 133 49.	Granite tower, 31 ft. high, on summit of island, near S. extreme of Yo Sima, Bingo Nada.	3a	85	15	1873
TSURI SIMA One bright fixed lt.	33 53. 132 38.2	Granite tower, 30 ft. high, on N.W. point of island. Obscured landward from S. by W. to E. by N. $\frac{1}{2}$ N.	3a	286	20	1873
Mi-hara One fixed light	34 24. 133 7.	.....	..	..	..	1861
Akasi One fixed light	34 39. 134 59.1	.....	..	..	..	1861
AWADJI ISLAND One bright fixed lt.	34 36.7 135 0.5	Stone tower, 15 ft. high, on N. point of the island. Shown southward, from E. round to S.W. by W. $\frac{1}{2}$ W.	1a	158	18	1871
Mieco One fixed light	34 38. 135 3.	.....	..	..	..	1866
Wada Misaki One red fixed light	34 39.5 135 12.	Octagonal white tower, 46 ft. high .....	..	52	10	1871

Name and Character of Light.	Lat. N. Long. E. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SETO UCHI or INLAND SEA—(continued).						
Kobé	34 41.2	In Gulf of Osaka. Shown from staff, 34 feet	..	42	6	1877
One fixed <i>green</i> lt.	135 12.5	high, on East pier .....	..	53	10	1871
Ōsaka River	34 39.7	Square white tower, 30 ft. high, on Temp san	..	53	10	1871
One bright fixed lt.	135 26.6	Fort	6a	40	8	1878
Kishu Gawa Entrance	34 37.8	From outer extr. of southern embankment at	6a	40	8	1878
One fixed <i>red</i> light	135 27.8	Kishu Gawa entr., 2 miles S.S.E. from Osaka Bar. Brick lt.-ho., 29 ft. high, black and white horizontal bands.....	..	..	5	1866
Sakai River	34 35.2	On the fort	3a	208	19	1872
One fixed light	135 28.	Granite tower, 21 ft. high, on West end of Tomangai Island, in centre of strait.....	1a	163	20	1878
ISUMI STRAIT	34 16.7	Stone lt.-ho., painted white, 60 ft. high. Lt.	..	130	18	1870
One fixed bright light	135 0.5	shown seaward betw. S. 84° E. & N. 46° W.	4b	102	15	1873
SIWO-MISAKI	33 26.3	On E. point of island; bright half a minute, eclipsed half a minute	4a	176	15	1873
One fixed bright light	135 46.3	White wooden tower on Tonio or Anod Saki, the S. head of entrance	1b	172	19	1874
Ōō SIMA	33 28.	Brick tower, 28 ft. high, on Suga Sima, at entrance to harbour, on W. side of Owari	6a	185	10	1871
One br. rev. lt., 1 min	135 52.	Bay	1a	164	20	1871
Matoya	34 22.	White lt.-ho., 57 ft. high, on Sand hill, S. part of cape, W. point of entr. to Suruga Gulf.	4a	106	9	1870
One br. rev. lt., 1 min.	136 54.8	Shows from W. by N. $\frac{1}{2}$ N. by the S. to N.E.	..	110	16	1871
Toba Harbour	34 30.7	Octagonal white tower, 20 ft. high	4a	170	14	1869
One fixed bright light	136 54.	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour .....	..	146	7	1878
OMAE SAKI	34 36.	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour .....	..	38	10	1870
One br. rev. lt. $\frac{1}{2}$ min.	138 14.3	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour	4a	53	9	1870
Iro-o-Saki	34 36.	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour	4a	40	8	1875
One <i>red</i> fixed light	138 51.5	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour	1a	134	20	1870
ROCK ID. (Mikamoto)	34 24.3	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour	1a	134	20	1870
One bright fixed light	138 57.2	White stone tower, 75 ft. high, on Rock Island, off Simoda harbour	1a	134	20	1870
YEDO GULF						
JOKA-SIMA	35 9.	On W. end of Id. Lt. is green over arc of 309°	4a	106	9	1870
One green fixed lt.	139 37.	from S.E. $\frac{1}{2}$ E. to E. by N. ....	..	110	16	1871
SAGAMI MI-SAKI	35 8.	Tower, 36 feet high, on W. side of entrance.	4a	170	14	1869
One br. flashing lt.	139 41.	Flash every 10 secs. Lt. is bright southward, from W. by S. to N.E. $\frac{1}{2}$ E.; thence red to N.N.E. $\frac{1}{2}$ E., over the Plymouth Rocks .....	..	146	7	1878
KANON SAKI	35 14.7	Square stone tower, on W. pt. of entr. Shown	4a	170	14	1869
One bright fixed lt.	139 44.3	from N.N.E. $\frac{1}{2}$ E. to S.S.E. $\frac{1}{2}$ E. A red sector of lt. is shown from window, 33 ft. below principal lt., betw. N. $\frac{1}{2}$ W. (cutting 2 cables W. of Saratoga Spit buoy) and N.N.E. ....	..	146	7	1878
Lower <i>red</i> light	139 44.3	Square stone tower, on W. pt. of entr. Shown	4a	170	14	1869
Yokohama Bay Lt.-V.	.....	Two masts; ball at fore; at extreme of shoal water off Mandarin Bluff .....	..	38	10	1870
One fixed <i>red</i> light	.....	Two masts; ball at fore; at extreme of shoal water off Mandarin Bluff .....	..	38	10	1870
Yedo Bay	.....	1. At E. entrance to Tsikidji Channel.....	4a	53	9	1870
1. One fixed <i>red</i> lt.	35 31.6	2. White iron tower in 7 ft. water, off Haneda	4a	40	8	1875
2. One fix. <i>green</i> lt.	139 47.3	Pt., S. pt. of Yedo anchorage. Lt. vis. over bay betw. S.W. by W. $\frac{1}{2}$ W. & N.N.W. $\frac{1}{2}$ W.	1a	134	20	1870
NOSIMA POINT	34 53.3	Octagonal tower on E. side of entrance, E. of	1a	134	20	1870
One bright fixed lt.	139 51.4	Mela Head	1a	134	20	1870

Name and Character of Light.	Lat. N. Long. E. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
INUBOYE SAKI One rev. br. lt. $\frac{1}{2}$ m.	35 43.5 140 53.5	Circular brick tower, 105 feet high, painted white. Light obscured towards land.....	1b	168	19	1874
East Coast	37 20. 141 4.	One fixed light .....	..	..	..	1863
KINGKASAN ISLAND One fixed bright light	38 19. 141 36.	Granite tower, 26 ft. high, in Sendai B y. Lt. shown betw. N. by E. and S.W. $\frac{1}{2}$ W.....	1a	178	19	1876
Kita-Kami River One bright fixed light	38 26. 141 15.	Fr m a staff on E. bank of river, in N. part of Sendai Bay, E. coast of Nipon .....	..	52	6	1874
SIRIYA SAKI One fixed bright light	41 26.2 141 29.4	Brick tower, 94 ft. high, painted white, on N.E. pt. of Nipon Id.; lt. shown betw. S. $\frac{1}{2}$ W. through E. and N. to S.W. by W. Battler Rock lies $\frac{1}{2}$ m. N. 70° E. of lt.-ho. Fog-bell, 15 strokes a minute	2a	150	18	1876
Awomori One fixed red light	40 51.8 140 45.3	From staff, 100 yards from high water mark, in front of town. Strait of Tsugar .....	..	45	6	1874
Hakodadi Bay Lt.-Ves. One bright fixed light	41 47.5 140 44.7	At the extreme of bank extending from Point Anama, the N.W. point of the town; painted red, two masts, ball at the fore; in $7\frac{1}{2}$ fms.	●	36	10	1866 1871
CAPE NOYSHAP One fixed bright light	43 21. 145 45.	White lt.-ho., 35 ft. high, on E. extr. of cape. Lt. shows seaward betw. S.S.W. $\frac{1}{2}$ W. and W.N.W. $\frac{1}{2}$ W. Fog-bell, 12 strokes a minute. April 1 to Dec. 15	5a	74	10	1873 1877
Nemoro One fixed red light	43 20.8 145 35.	On N.E. extremity of Beulen Sima, S.W. side of entr. to anchorage. April 1 to Dec. 15 ...	..	75	6	1873

GULF OF TARTARY.

NOVOGOROD PORT <i>Building</i>	42 33.7 131 10.	Building on Garnova Cape. Coal mines in the neighbourhood .....	..	..	..	....
Vladivostok One fixed bright light	43 1.7 131 58.	On South point of Scriplew or Skrypleff Id., E. entrance to East Bosphorus Strait .....	..	150	15	1877
NAHODKA PORT <i>Building</i>	42 38. 133 0.5	Building on Pororotnoi Cape, American Gulf .....	..	..	..	....
OLGA PORT <i>Building</i>	43 22. 135 15.	Building on Tchikhatchew Island, at the entrance .....	..	..	..	....
PORT IMPERIAL <i>Building</i>	49 0. 140 27.	Building on Mouraviev Cape, at the entrance .....	..	..	..	....
SAGHALIN ISLAND One bright fixed light	50 50. 142 6.6	Square tower, 40 ft. high, on the slope of a steep hill near Dul. Shown from S.W. $\frac{1}{2}$ W. round West, to N. by E. $\frac{1}{2}$ E.....	●	374	15	1864
CASTRIES BAY One bright fixed light	51 26. 140 52.	Lt.-ho. red with white lantern, 69 ft. within extr. of Kloster-Camp, or Quoin Point, in the Gulf of Tartary	●	262	8	1861 1878
River Amur One bright fixed light	53 7.3 140 41.8	Square white tower, 29 ft. high, on Constantine Battery, opposite to Nikolaevsk	6a	40	8	1861

KAMCHATKA.

DALNI One fixed bright light	52 52.5 158 47.	E. side of entrance, Avatchka Gulf. Shown from W. by S. northwards, to S.E. $\frac{1}{2}$ E. Telegraph to Petropaulski. Lighted occasionally .....	..	449	24	1851
Baboushkin Point One fixed bright light	52 54.7 158 42.6	On second point, W. side of entrance. (Uncertain) .....	..	294	19	....
Rakof One fixed bright light	52 57.5 158 43.6	On signal-station, $\frac{1}{2}$ a mile S. of entrance to Rakovya Harbour. (Uncertain) .....	..	378	22	....

Name of Light.	Lat. S. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established

AUSTRALIA.

CHAMPION BAY Fixed <i>red</i> leading lts.	28 44.6	Towers, upper square and 25 feet high, lower octagonal and 37 feet high; painted white, 202 yds. apart, on N. shore of bay. Lts. vis. through arc of 75° and in line, bearing E. by N. $\frac{1}{2}$ N., lead betw. shoals off Moore Point & those off Four-fathom Bank .....	..	65	9	1877
	114 37.4		4a	41	8	1877
Moore Point One rev. br. lt. 40 s. Lower <i>red</i> light	28 46.8	Champion Bay. From round iron tower, painted wh. Lower red lt. shown northward betw. N.N.E. $\frac{3}{4}$ E. and N.E. by E. $\frac{1}{4}$ E.; also to the southward betw. S. $\frac{1}{4}$ E. (leading 2 miles W. of African Reef) and S.S.E. $\frac{1}{4}$ E.	2b	110	18	1873
	114 35.		4a	..	..	....
ROTTNEST ISLAND One br. rev. lt., 1 m.	32 0.	White tower, 64 ft. high, on centre of island... ..	..	197	20	1850
	115 31.2		..	92	14	1851
SWAN RIVER One fixed bright light	32 3.2	Stone tower on summit of Arthur Head, South entrance .....	..	92	14	1851
	115 45.1		..	92	14	1851
KING GEORGE SOUND One fixed bright light	35 4.3	Iron tower, 43 ft. high, 1,200 yds. within E. end of Breaksea Id.; opens when bearing N.E. $\frac{1}{4}$ N.	3a	384	24	1858
	118 3.3		3a	384	24	1858
Princess Royal Harb. One fixed bright lt.	35 2.6	Point King, North entrance	3a	37	10	1858
	117 55.2		3a	37	10	1858

SOUTH AUSTRALIA.

SPENCER GULF

Port Augusta One fixed bright lt.	33 3.3	From lt.-ves., moored in 9 fms., about 2 miles N.W. of N. end of Eastern Shoal .....	..	..	8	1878
	137 46.5		..	..	8	1878
Tipara Reef Rev. br. lt. ev. $\frac{1}{2}$ m.	34 3.	From iron pile lighthouse on reef. Lightvessel discontinued.....	1b	100	16	1877
	137 24.		1b	100	16	1877
INVESTIGATOR STR.	.....	Lt.-ho., 40 ft. high, building on Althorpe South Id. Rev. br. lt. ev. 15 secs., and red sector over Emmes Reef and S.W. rock .....	..	..	..	....

BORDA, or FLINDERS CAPE

One rev. lt., $\frac{1}{2}$ min.	35 45.3 136 38.	Square tower, 60 ft. high, on N.W. point of Kangaroo Island. Flashes alternately bright and red. Shown from S.W. by S. to N.E. by E.	●	510	30	1858
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ST. VINCENT GULF

TROUBRIDGESHOAL One intermit. br. lt.	35 7.3 137 51.3	Iron tower, 78 ft. high, red & white bands, on centre of Id. Bright 24 secs., dark 36 secs.	●	80	16	1856
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PORT ADELAIDE

One br. rev. lt. $\frac{1}{2}$ m.	34 48.1 138 29.8	Iron tower, red, surrounded by piles, on S. side of outer bar of the creek.....	1b	80	17	1879 1875
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Lefevre's Peninsula

One fixed <i>green</i> lt.	34 50.9 138 30.2	End of jetty. Pilot station. Shown westward, from S.W. by W. to N.W. by N.	27	8	1860
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Glenelg Jetty

One fixed <i>red</i> light	34 59.5 138 33.	Outer jetty. For mail steamers	29	6	1859
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Two fixed bright lts. From hulk, $1\frac{1}{2}$ mile W. of jetty. (Uncertain).

CAPE JERVIS

One bright fixed lt.	35 37. 138 7.5	Shown from S.S.W. $\frac{1}{4}$ W. to N. $\frac{1}{4}$ W. Reef projects 1,600 ft. S.W. of lighthouse	13	1871
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CAPE WILLOUGHBY

One rev. br. lt., $1\frac{1}{2}$ m.	35 51.1 138 9.6	Sturt Lighthouse; a white tower, 75 ft. high, on S.E. point of Kangaroo Island. Shown southward and eastward, from S.W. to N. by W. $\frac{1}{4}$ W.	●	247	24	1832
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CAPE JAFFA

One br. rev. lt., $\frac{1}{2}$ m.	36 55. 139 36.	A screw pile lighthouse, 70 ft. high, on centre of Margaret Brock Reef, off Cape Jaffa, or Bernouilli	1b	100	16	1872
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CAPE NORTUMBER-
LAND

One rev. bright, <i>red</i> , & <i>green</i> light, 1 min.	38 3. 140 37.7	Tower, 28 ft. high, on cape. Flashes bright, red, and green, alternately. Shown from E. by N. $\frac{1}{4}$ N. to W.N.W.	●	123	18	1859
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Murray River

	35 31.	A revolving light is shown on Point Malcolm, Lake Alexandrina	5b	70	10	1878
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Rivoli Bay

Fl. br. lt. ev. 10 secs.	37 30.6 140 1.3	White lighthouse on Penguin Island, N. end of Rivoli Bay	80	12	1878
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AUSTRALIA.

LIGHTHOUSES.

VICTORIA.

Name and Character of Light.	Lat. S. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
VICTORIA.						
CAPE BRIDGEWATER, OR CAPE NELSON <i>Proposed</i>	38 22. 141 19.	Lighthouse proposed for one of these capes...	..	..	..	....
Portland Bay 1. One fixed <i>red</i> light 2. One <i>green</i> light	38 3. 141 39.	1. Red lt. on Observatory Hill. Shown from S.E. to N. by W. 2. Green lt. on end of old jetty. Lifeboat station	4a	116	13	1859
Port Fairy 1. One fix. & flash. <i>red</i> lt. 2. One fixed <i>green</i> lt.	38 24. 142 20.	1. S.E. part of Griffith Island. Red flash ev. 3 minutes. Lifeboat station 2. On Look-out Hill, 500 yds. S.W. by W. from end of jetty. Shown betw. N. and E.N.E.; may be steered for as soon as seen	4c	41	9	1859 1872 1877
Warrnambool Bay 1. One fixed bright lt. 2. One <i>red</i> fixed light 3. One <i>green</i> light	38 26. 142 32.	1. Bright lt. from a tower on site of obelisk in front of town. Shown from W. round S. to S.E. 2. Red lt. from lower obelisk. Shown from S. & W. to S.E. In line with bright lt., leads in. Lifeboat station 3. Green light from end of jetty	..	109	14	1859 1871 1860 1871
BASS STRAIT						
CAPE OTWAY One rev. br. lt., 1 m.	38 51. 143 34.	White tower, 62 ft. high, on S.W. extremity. A dangerous reef $\frac{1}{2}$ of a mile to S.S.E.	●	300	24	1848
KING ISLAND One fixed bright lt.	39 35. 143 57.	White tower, 145 ft. high, on N. point, or Cape Wickham. Shown from S.S.W. $\frac{1}{2}$ W., round southward, to E.S.E.	..	280	24	1861
PORT PHILLIP						
Lonsdale Point One <i>green</i> or <i>red</i> lt.	38 17. 144 39.	Light green outside danger, from S. by E. to S.E. $\frac{1}{2}$ E.; red inside danger, toward Nepean Point and the harbour, to E. by N. Mortar and Rocket station. Whistle-buoy in 12 fms., 4 miles to S.W. by W.	..	..	7	1863
South Channel Leading Lights	.....	Leading lts. for S. Channel. Eastern lt., immediately under Arthur's Seat, shows red betw. N. by E. $\frac{1}{2}$ E. & N.W. $\frac{1}{2}$ W.; wh. over Middle Ground, betw. N.W. $\frac{1}{2}$ W. and W. by S. $\frac{1}{2}$ S. A br. lt., 40 ft. b low this lt., is shown betw. the same bearings as the red lt. Western lt. from pile lt.-ho., on S. side of channel, shows red between E. $\frac{1}{2}$ N. and S.W. $\frac{1}{2}$ S.; white over Great Sand, from S.W. $\frac{1}{2}$ S. to S.S.E., and is obscured to the N.E., between N.N.W. and E. $\frac{1}{2}$ N.				
SHORTLAND BLUFF 1. High lt. br. & fix. 2. Low lt. br. or <i>red</i>	38 16.4 144 39.8	1. High light-tower, gray, 81 ft. high, on W. side of entrance, $2\frac{1}{2}$ miles N.E. $\frac{1}{2}$ E. from Point Lonsdale light. Shows in the offing, from W. by S. to S.; but near entrance, from S.W. by W. to S. Within the heads it shows from S.W. by W., eastward, to N.E. by E. 2. Low light-tower, white, 69 feet high, at 352 yards S.W. by S. from the high light. In one, they lead in. The low light shows bright from about S.W. by W. to S.W. $\frac{1}{2}$ W.; over the dangers off Point Lonsdale; it is red in the fairway from S.W., southward, to S.S.W.; thence bright, eastward, to E. by S., from over the Corsair Rock to the edge of the South Channel. A lifeboat station	2a	130	17	1842 90 14 1863 10
Queenscliff	.....	Green light on end of jetty	..	..	..	....
Sorrento	.....	Green lt. from lamp-post on end of jetty	..	..	2	1876
Tromana	.....	Green light on end of jetty	..	..	..	....
SWAN SPIT						
One fix. br. or <i>red</i> lt.	.....	Pile lighthouse, red, 38 ft. high, in 15 ft. water, at S. entrance of West Channel. Shows br. from about W.S.W. to S.W. $\frac{1}{2}$ W.; thence a red ray over entrance of West Channel to S.W. $\frac{1}{2}$ S.; thence bright, eastward, to S. by E. $\frac{1}{2}$ E., and thence red to N. $\frac{1}{2}$ E. A gong in thick weather	..	33	8	1863
West Channel Lt.-V. Two bright fix. lts.	.....	Painted red; three masts; in 3 fms., at N. end of channel. Gong every 5 minutes in fogs...	●	50	8	1854
Portarlington 1. One fix. <i>green</i> lt. 2. One fixed <i>red</i> lt.	.....	1. On end of jetty; visible from W. by S. $\frac{1}{2}$ S., by the South, to S.E. by E. $\frac{1}{2}$ E. 2. Shown betw. E.N.E. & N.W. by W., clearing Prince George Bank and Richard Shoal	..	22	5	1872
Geelong Lightvessel One bright fixed lt.	.....	Painted red; one mast and ball; in 2 fms., on starboard side, near Bird Rocks. Gong ev. 10 minutes in fogs; tide-signals	●	27	7	1857

Character of Light.	Lat. S. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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PORT PHILLIP—(continued).

Geelong	Bright lt. on end of steam-boat jetty	3	1857
		Bright lt. on pier-head.....	..	..	3	1857
Melbourne Light-Ves.	37 53-	Painted red; one mast and ball; in 5 fathoms,	●	40	10	1859
One rev. bright lt.	144 55.3	off Gellibrand Point. Flash every $\frac{1}{2}$ min. Gong in fogs. Pass to southward				
Williamstown	.....	Red lt. on end of breakwater. Red lt. on outer black dolphin. Green lt. on Elbow beacon. Bright lt. on Williamstown beacon, but shows red up the first reach of the Yarra ...	..	..	3	1857
Sandridge	.....	Red lt. on end of old jetty; green lt. on rail- way pier .....	..	..	3	1857
St. Leonards	.....	Green light on end of jetty.....	..	..	3	1876
Schnapper Point	.....	One bright fixed light .....	..	50	10	1870
		Red light on end of jetty.....	..	..	3	....
CAPE SCHANK	38 30.	Stone tower, 70 ft. high, on highest part of S.	1d	328	23	1859
One fixed & flash. lt.	144 54-	extremity. Fixed lt., with flash every 2 minutes. Shown from E. $\frac{1}{2}$ S. to N.W. $\frac{1}{2}$ W. A reef $\frac{1}{2}$ of a mile to S.S.E.				
Western Port	38 28.6	On Flinders Jetty. Sels should not anchor in the br. ray, betw. S.E. $\frac{1}{2}$ S. & E. $\frac{1}{2}$ N., to avoid the telegraph cable.....	..	21	4	1869
One bright or red lt.	145 1.5					
WILSON PROMONTORY	39 7.9	White stone tower, 70 ft. high, on S.E. point.	●	383	24	1859
One fixed bright light	146 25.6	Shown from N.N.E., round to W.S.W.				
PORT ALBERT	38 46.	White stone tower, 42 ft. high, on E. part of Latrobe Island, Corner Inlet. Fixed light, with flash every 3 min. Shown from E. by N. southward, to S.W. Lifeboat station.....	4d	40	9	1859
One fixed & flash. lt.	146 40.6					
DEAL ISLAND	39 29.	Tower, 46 ft. high, on summit of S.W. side;	●	950	36	1846
One rev. br. lt., $1\frac{1}{2}$ m.	147 21.6	upper part red, lower white. (The light is often hidden by fogs)				
CAPE HOWE	37 34.7	Granite tower, 156 ft. high, on S.E. point of Gabo Island, $\frac{1}{2}$ miles S.W. $\frac{1}{2}$ S. of Cape Howe. Shown from W. $\frac{1}{2}$ S. to N.E. by N.	1a	179	17	1862
One fixed bright light	149 55.1					

NEW SOUTH WALES.

Eden Harbour	37 4.5	White tower, 45 ft. high, on Lookout Point,	●	140	9	1862
One fixed red light	149 55.6	Twofold Bay				
Ulladulla	35 21.5	One green pier light .....	..	43	7	1873
	150 30.					
JERVIS BAY	35 9.3	White tower, 61 ft. high, at 1 mile N. of cape	●	224	18	1860
One altern. lt. ev. $\frac{1}{2}$ m.	150 47.4	St. George. Light is bright, red, and green, alternately			14	
Wollongong	34 25.	On end of breakwater. Shown between N.N.E.	..	56	5	1872
One fixed red light	150 55.5	and E. by S. $\frac{1}{2}$ S.				
PORT JACKSON						
SOUTH HEAD	33 51.2	Macquarie Tower, white, 76 ft. high. Shown	●	344	21	1817
One rev. br. lt., $1\frac{1}{2}$ m.	151 18.3	from S.E. by S. to N.E. $\frac{1}{2}$ E. Electric tele- graph to Sydney.....				
HORNBY	33 51.6	Tower, 50 ft. high, red and white vertical	●	90	14	1858
One fixed bright lt.	151 18.7	stripes, on edge of cliff, inner S. head. Shown from S.E. by S., eastward, to N.E. $\frac{1}{2}$ E. A lifeboat station				
Sow and Pigs Shoal	33 50.1	Bramble Lightvessel, painted red; in 22 ft.,	●	28	6	1836
Lightvessel	151 19.	on N.W. edge of shoal. Lights vertical. A red flag by day		22		
Two fixed bright lts.						
Fort Denison	33 51.5	On tower. Garden Island is in longitude	..	..	..	1858
One fixed red light	151 14.6	151° 14' 47" E.				

Name and Character of Light.	Lat. S. Long. E. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H.W.	Visible in Miles.	Year established.
BROKEN BAY						
Two bright fixed lts.	33 35- 151 20.	On Barenjo, or Barranjuay, the inner S. head. In one, N.N.W., 393 yds. apart. Both lts. masked, from S. to S.S.E. & E. over the land from the outer S. head. They are visible in safe approach. Temporary .....	..	347 315	8 8	1868
NEWCASTLE						
Nobby Head	32 55.3 151 49.3	On S. side of entrance to Port Hunter. Shown eastward, from S. by W. to N.E. by E. Tidal signals from a mast near	●	115	17	1858
One bright fixed lt.						
North Channel	.....	Red and bright lts. on breakwater. In one, W. by N., 33 yds. apart, lead in .....	..	..	..	....
Two fixed lights						
Fairway Lights	.....	On a hill at the back of the town. Upper beacon, red, shows a bright light. Lower beacon, white, shows a red light. In one, S.W. & S., 76 yds. apart, lead in .....	..	..	..	1866
Two fixed lights						
PORT STEPHENS	32 45.2 152 13.3	1. White tower, 70 ft. high, on S. side of entrance. Shown from S.W. to N.E. by N. Should not be approached within a mile. Light red and white alternately	●	126	17	1862
1. One rev. lt. every m.						
2. One fix. br. or red lt.		2. On Nelson Head. Is br. seaward, eclipsed over entrance shoal, and red after shoal is passed .....	..	..	9	1872
SUGARLOAF POINT	32 26.2 152 33.3	For green lt. as warning from Seal Rocks and adjacent dangers. Shown betw. N. and N.W. by W. & W., but not vis. from Edith Breaker	1b ..	258 ..	22 3	1875 1875
Revol. br. lt., $\frac{1}{2}$ min.						
Manning River	31 52.8 152 42.6	At the pilot station .....	..	..	6	1866
One fixed bright light						
Clarence River	29 25.5 153 23.2	At the pilot station .....	..	..	6	1866
One fixed bright light						
Richmond River	28 51.5 153 35.9	One at pilot station. An additional bright lt. shown. In one, W.N.W., 150 ft. apart.....	.. ..	.. ..	6 8	1866 1872
Two bright fixed lts.						
Tweed River	28 11.2 153 35.5	On Fingal Head .....	..	..	7	1872
One fixed bright light						
MORETON BAY						
MORETON ISLAND	27 2.3 153 29.	White stone tower, 70 ft. high, on N.E. point. Electric telegraph from signal station to Brisbane	●	382	26	1857
One br. rev. lt., 1 m.						
Yellow Patch	27 2. 153 27.7	White tower, 43 ft. high, $\frac{1}{2}$ mile S.W. from N. pt. of Id. Lt. br. betw. N. & E. & N.W. by W. & W., red from N.W. by W. & W. to fairway buoy or N.W. by W. & W., and br. from N.W. by W. & W. to W. & S. Seaward, br. lt. in sight leads W. of Hutchinson Shoal, & N.E. of North Banks	5a	49	11	1868 1878
One bright fixed lt.						
Comboyuro Point	27 4.1 153 23.	Light red seaward, from land to N. by E. & E. Hidden over E. banks; thence to N.N.W. Bright thence to W.N.W., then masked to S. & W., and thence bright to S. by E.	5a	20	9	1862
One br. or red fix. lt.						
Cowan Cowan Point	27 8. 153 22.1	White tower, 37 ft. high. Light bright from N. by W. & W. to W. & S.; thence hidden to S.W. & S.; thence bright to S.S.W.; then hidden to S. by W. & W.; thence red to about S.	5a	38	10	1864
One br. or red fix. lt.						
East Beacon, red light	.....	On iron screw piles, 560 yds. from Bar Light-vessel	6a	22	7	1862
Brisbane Bar Lt.-Ves.	27 21. 153 10.	Painted red; lies inside the bar. Tide signals, day and night, to show depth of water on the bar and in the cutting	6a	34	10	1860
One bright fixed lt.						
West Channel	.....	Green lt. on piles, 3 cables S.W. of lt.-vessel	..	10	..	1866
West Beacon, bright lt.	.....	Red iron piles, $\frac{1}{2}$ of a mile S. of lightvessel ...	6a	22	7	....
Cleveland Point	27 30.5 153 18.7	White tower, 39 ft. high, on extremity of point	6a	38	10	....
One bright fixed lt.						

Name and Character of Light.	Lat. S. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
QUEENSLAND.						
SANDY CAPE	24 43.3	White iron tower, 99 ft. high, on highest hill on cape; N. part of Great Sandy Island.....	1b	400	27	1870
One br. rev. lt., 2 min.	153 13.7					
MARYBOROUGH	25 16.3	1. White tower, 34 ft. high, on Middle Bluff of Woody Island, Hervey Bay. Shows red from N.N.E. $\frac{1}{2}$ E. to N. $\frac{1}{2}$ W. Hidden betw. S.S.E. $\frac{1}{2}$ E. and S. by E. $\frac{1}{2}$ E.	4a	215	19	1867
1. One fixed light	152 59.5	2. White tower, 34 ft. high, on North Bluff of Woody Island. Shown from N.E. $\frac{1}{2}$ E. to E. $\frac{1}{2}$ N., 2 miles N.W. $\frac{1}{2}$ W. from Middle Bluff lt. In one lead over the bar, S.W. of the Middle Banks	4a	130	16	1867
2. One fixed red light						
Burnett River	24 45.	1. Lt.-house white, on S. head. Lt. vis. betw. S.E. by E. and N.W. by W. Do not approach Burnett Banks nearer than 3 miles till this light bears W.S.W., when steer for it	•	33	10	1873
1. One fixed bright lt.	152 25.	2. In one lead across the bar				1877
2. Two fix. leading lts.						1877
Lady Elliot Island	24 7.	White iron tower on island, in Curtis Channel. Flashes every half minute	4b	67	10	1866
One br. revolving lt.	152 45.3					
BUSTARD HEAD	24 1.3	1. White tower, 58 ft. high, on S.E. part of cape. Fix. lt., with a brighter flash ev. 2 m. A red ray over Outer Rock to N. $\frac{1}{2}$ E. The lt. is red from W.N.W. to the land	2c	330	24	1868
1. One fix. & flash. lt.	151 42.	2. Shown from tower, lying S.E. by S. from Bustard Head lt.-ho., betw. N. by W. $\frac{1}{2}$ W. & N.E. $\frac{1}{2}$ N., but vis. as far as N.E. by E. $\frac{1}{2}$ E., & also betw. N.W. & W.N.W. It is so screened betw. N.N.W. & N. by W. as not to be vis. outside Outer Rock. By keeping it in sight while Bustard Head red lt. is vis., the Outer Rock will be avoided	6a	280	..	1876
2. One fixed light						
PORT CURTIS						
Gatcombe Head	23 53.1	1. White tower, 30 ft. high, on S.E. pt. of head. Lt. br. seaward, red towards N. Channel betw. N.E. $\frac{1}{2}$ N. and E. by N. $\frac{1}{2}$ N., and also betw. S.W. and S.S.W. in S. Channel	5a	66	10	1868
1. One bright or red fixed light	151 23.7	2. A lt. reflected from Gatcombe Head, on red iron beacon on S.E. part of Oyster Rock. Shown towards East Banks betw. S.W. by W. $\frac{1}{2}$ W. and S.E. by S., & also south-westward betw. W. by S. $\frac{1}{2}$ S. & S. by W. This beacon S.W. by W. $\frac{1}{2}$ W. leads into N. Channel, and bearing N. by E., in line with Gatcombe Head lt., clears Junction buoy .....	..	18	4	1868
2. Reflected light						
CAPE CAPRICORN	23 24.2	Round stone tower, 39 ft. high. Electric telegraph and Signal-station.	3b	310	22	1875
Rev. br. lt. ev. min.	151 15.8					
Keppel Bay	23 27.1	1. At pilot station. In line N.W. $\frac{1}{2}$ N., point out Timandra Bank buoy	•	..	7	1865
1. Two fixed lights	151 2.9	2. Shown from Little Sea Hill. When in line lead over Timandra Bank buoy. Upper lt. eclipsed S. of N.W. by N., but bright in S.W.-ly direction .....	..	..	..	1876
2. Two fix. bright lts.						
FitzRoy Riv. Lt.-Vessels	23 32.1	1. Painted red; in 7 fathoms, Port of Rockhampton; below	a	44	8	1866
1. One bright fixed lt.	150 57.1	2. At the crossing-place at the upper flats Night and day tide-signals	6a	18	5	1866
2. One red fixed light		From flagstaff at pilot-station .....	..	..	..	1878
St. Lawrence Creek	22 18.5					
One fixed bright lt.	149 34.					
Pioneer River	21 10.2	Temporary; from the Signal-station on Flat-top Id., off the entrance; obscured when bearing W.N.W. by Round-top Island. Tide signals at Pilot-station .....	..	220	10	1874
One fixed light	149 12.5					
PORT DENISON	19 59.9	White tower, with red dome, 30 ft. high, on N. Head Islet. White seaward, red between N. by W. $\frac{1}{2}$ W. and N. $\frac{1}{2}$ E.	6a	86	11	1865
One fix. br. or red lt.	148 17.7					1867
C. BOWLING GREEN	19 19.3	Lt.-house moved 120 yds. S.W. of its original position .....	..	70	10	1874
One br. rev. lt. ev. min.	147 27.6					1878
Cleveland Bay	.....	1. From pile at outer end of breakwater, W. side of Ross Creek, Cleveland Bay .....	..	..	..	1876
1. One fixed red light		2. Shown on end of jetty works at Magazine Island .....	..	15	..	1878
2. One fixed red light						
Trinity Bay	.....	Fixed bright light from westernmost Low Islet. Lighthouse to be constructed	•	40	8	1878
C. MELVILLE LT.-V.	14 7.7	In 14 fms. W. $\frac{1}{2}$ S. from Pipon Islets ben., and N. $\frac{1}{2}$ E. from Channel Rock. Pass N. of lt.-ves. ....	..	35	10	1878
One fixed bright lt.	144 31.5					
No. VI. (Claremont) Id. Lightvessel	13 28.7	Inner Route to Torres Strait. Moored West of Id. in 12 fms., with Heath Rock beacon bearing W. by N. $\frac{1}{2}$ N., 2 $\frac{1}{2}$ miles distant	a	35	10	1876
One fixed bright light	143 44.3					
Piper Islands Lt.-Ves.	13 14.	Inner Route. Moored in 13 fms., with North Piper Id., W. by S. $\frac{1}{2}$ S., and K. Islet N. $\frac{1}{2}$ E.	a	35	10	1876
	143 16.1					

Name and Character of Light.	Lat. S. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
TASMANIA.						
Eddystone Point	.....	N.E. Coast of Tasmania. Light-ho. proposed	..	..	..	....
SWAN ISLAND	40 44.	Red and white tower, 74 ft. high, on N. point	1b	110	14	1845
One rev. br. lt., 1 min.	148 9.					
GOOSE ISLAND	40 18.7	Red and white tower, 74 ft. high. Chappel Island, near South point	1a	135	15	1846
One fixed bright light	147 48.					
DALRYMPLE PORT	41 3.4	Red and white tower, 36 ft. high, on low head, E. entrance to Tamar River	●	142	15	....
One rev. br. lt., 1½ m.	146 48.3					
D'ENTRECASTEAUX CHANNEL	43 29.	White tower, 44 ft. high, on Cape Bruny, S.W. point	●	335	22	1838
One rev. br. lt., 1½ m.	147 8.					
HOBARTON	43 3.7	Red tower, 40 ft., on Iron Pot Id., mouth of Riv. Derwent. Red lt. shown on Argyle St. wharf, green lt. on Franklin wharf, and br. lt. on Castray esplanade	a	65	10	.... 1863
One fixed bright light	147 26.					
NEW ZEALAND.						
NORTH ISLAND.						
CAPE MARIA VAN DIEMEN	.....	Lt.-ho., to show br. rev. lt. every min., to be completed about Jan. 1879, on islet lying half a mile N.W. from cape. Lower red light shown in direction of Columbia Reef	..	..	..	....
Bay of Islands	.....	At Port Russell, Kororarika Bay. From lamp-post on extr. of Government Wharf. Good anchorage in 4½ fms., with lt. N.E. by E. & E.	..	20	2	1878
One fixed red light						
HAURAKI GULF	36 36.5	Red iron tower, 48 ft. high, on S.E. point of Tiri-Tiri-Matangi Island	2a	300	23	1865
One fixed bright light	174 55.2					
AUCKLAND	.....	A pile lt.-ho. Lt. is red in Tehmaki Strait, &c., betw. E. & N. & N.E. by E. & E.; thence br. in fairway of Koreho Chan. to N.E. & E.; thence gr. over Rangitoto Reef, &c., to N.N.W. ½ W.; thence br. in fairway of Rangitoto Channel to N.W. ½ N.; thence red over Rough Rock to W. by S. & S.; thence br. to S.W. ½ W. in fairway of harb.	5a	50	10	1872
Bean Rocks						
One fixed light						
Queen's Wharf	.....	1. Shown triangularly on the East extremity	..	29	6	....
1. Three fix. br. lts.		2. Horizontal, on the W. extr. of the wharf. 1 and 2 in line clear S. side of harbour				
2. Two fixed br. lts.						
Railway Wharf	.....	Britomart Point. Two red lts. shown on the N.E. angle of the pier, and a bright light on the West end of the pier	..	..	..	1877
Pauhenehe Spit	.....	Frith of Thames. Lt. buildings painted white, on extr. of spit, S. pt. of Ponia Pass, Tehmaki Strait. Lt. obscured over Pahiki Island	5a	50	..	1873
One fixed bright lt.						
Graham's Town	.....	1. On outer end of wharf, visible to E. betw. S. & E. and N.N.W. ½ W.	..	18	2	....
1. One fix. green lt.		2. Guide for entering Kauerangi Creek, via to E. betw. S. & N.W. Anchor with Tararu lt. N.N.W. ½ W., and wharf lt. S.E. by E. & E.	..	28	6	....
2. One fixed red lt.						
PORTLAND ISLAND	39 18.	Lt.-ho. of wood, 28 ft. high, painted white, on S. pt. of Id. Lower red lt. shows only narrow sector over Bull Rock, N.E. 4 m. from lt.-ho.	..	300	24	1878
One rev. br. lt. ½ m.	177 53.					
Lower red light						
NAPIER BLUFF	39 29.	White tower, 20 ft. high, on the bluff in Ha-he Bay. Lt. is shown from S.E. by the East to N. by E. Do not mistake this for the white sector of the lt. at Port Napier entrance	4a	160	18	1874
One bright fixed light	176 56.					
Napier Port (Ahuriri)	39 28.7	1. At entr. of port. Lt. is red betw. N.W. by N. and N. by W. ½ W., bright over anchorage from N. by W. ½ W. to N.N.E. ½ E., and red from N.N.E. ½ E. to N.E. & N.	..	..	8	....
2. One fixed green lt.	176 55.2	2. At head of harbour works, Eastern Spit	..	..	..	1877
PORT NICHOLSON						
Pencarrow Head	41 22.	1. On summit of bold cliff, on eastern side of entrance to Port Nicholson, Cook Strait, Wellington	2a	450	30	1859
1. One fixed br. lt.	174 51.2	2. On Queen's Wharf				
2. One red fixed lt.						
Somes Island	41 15.7	Octagonal iron tower, white. Light red on western, bright in mid-channel; green on eastern side of harbour. Bright lt. bearing N. ½ W., leads up	4a	75	10	1866
Red, white, & green light	174 52.7					
Manawatu River	40 27.2	1. From mast	..	44	9	1878
1. One fix. bright lt.	175 14.7	2. On S. shore of entr. Outer beacon, red, shows green lt.; inner beacon, black, shows red lt. In line, lead over bar. Only shown when sufficient water over bar. Pilot and Signal-station on N. side of entrance	..	..	3	1878
2. Red and green leading lights			..	..	2	1878

Name and Character of Light.	Lat. S. Long. E.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Wanganui River One bright fixed light	39 57. 175 1.	On the flagstaff on the Castle Cliff, or N. head of the river .....	..	65	9	1872
New Plymouth	.....	Fixed bright light shown from flagstaff.....	..	75	..	1876
MANUKAU HARBOUR One bright fixed light	37 3.5 174 33.5	New white tower, 20 ft. high, on the brow of the S. head bluff, at $\frac{1}{2}$ mile W. by N. from Paratutai. Shown seaward between S. by E. $\frac{1}{2}$ E. and W. by N. $\frac{1}{2}$ N.	3a	385	28	1874
MIDDLE AND SOUTH ISLANDS.						
FAREWELL SPIT One revol. lt., 1 min.	40 33. 173 1.7	Timber framework, 118 ft. high, red & white bands. Br. lt., but red over Spit End, from S.E. $\frac{1}{2}$ S. to E. by S. $\frac{1}{2}$ S. Do not open red lt. within 4 miles. Hidden by land southward of W. by N.	2b	120	17	1870
Nelson Harbour 1. One fixed light 2. Two leading lights	41 15.1 173 17.1	1. From white tower on Boulder Bank. Betw. W. by S. and S.W. by S. light is red 2. On East shore, Upper beacon white shows bright lt.; lower red shows red lt. Occa- sional lt. is shown on Haul-shore Island ...	..	..	..	....
NORTH BROTHERS ID. One flashing bright lt. every 10 secs.	41 6.5 174 27.3	Tower of wood, white, 28 ft. high, on Id., W. side of Cook Strait. Red light shown from lower part of tower, over Cook Rock, through an arc of 5 degrees	2c	258	22	1877
Pictou Harbour One fixed red light	41 17.3 174 1.8	Queen Charlotte Sound. At end of wharf.....	●	20	6	1874
CAPE CAMPBELL One br. rev. lt., 1 min.	41 43.3 174 18.5	Open wood frame, 73 ft. high, red and white bands, on knoll at extreme of cape	2b	155	19	1870
PORT LYTTLETON One bright fixed light	43 35.5 172 49.5	Tower, 80 feet high, on Godley or Cachalot Head, N. side of entrance. Shown seaward, from E. $\frac{1}{2}$ S. to N.N.W. $\frac{1}{2}$ W.	2a	450	29	1865
Timaru One fixed bright light	44 23.5 171 18.6	Wooden lt.-ho., 30 feet high, painted stone- colour. Lt. shown eastward betw. S.S.E. $\frac{1}{2}$ S. and N. by W. $\frac{1}{2}$ W.	5a	85	14	1878
CAPE WANBROW One fixed red light	45 7. 171 1.	Light is shown seaward between S.S.E. and N. by E. Bearing S. by W. indicates outer anchorage of Oamaru.....	..	..	15	1878
Oamaru	.....	Green lt. at N. end of breakwater. Shown betw. S.E. and N.N.E. When it cannot be lit, a red lt. between two white lts. is shown .....	..	16	3	1877
Moerangi One fixed bright light	45 24.3 170 53.5	Lt.-ho., 28 ft. high, painted white, on S. pt. of Moerangi or Moeraki Peninsula	3a	170	19	1878
OTAGO HARBOUR 1. Leading lights 2. One fixed red light 3. Lightvessel	.....	1. Upper lt. green, lower lt. bright, N.N.E. & S.S.W., 300 yards apart. In one, lead over outer bar until red lt. at pilot station opens out. Shown betw. N. 41° W. & N. 34° E. 2. From a beacon inside Talroa Head, at pilot station. Gong ev. 15 secs. in foggy weather 3. Moored inside inner bar in 12 ft., $\frac{1}{2}$ cable S.W. by S. from first red beacon .....	..	36 26	6 ..	1876 1876
NUGGET POINT One bright fixed light	46 27. 169 21.	White tower, 31 ft. high, on outermost knob of S. point of Molyneux Bay	1a	252	23	1870
Waikawa Harbour	46 39.7	On S. point of entrance. (Uncertain).....	..	115	..	....
FOVEAUX STRAIT One br. rev. lt., $\frac{1}{2}$ min.	46 39.6 168 26.	Grey stone tower, 118 ft. high, on Dog Island, S.E. of Bluff Harbour.....	1b	150	18	1865
Centre Island One fixed bright or red light	46 25.5 167 52.5	Wooden lt.-ho., 20 ft. high, at S. extr. of Id., N. side of Strait. Lt. br. seaward between W. $\frac{1}{2}$ N. and E. by S., red from E. by S. to N. $\frac{1}{2}$ W., obscured betw. N. $\frac{1}{2}$ W. & N.W. $\frac{1}{2}$ W., and red betw. N.W. $\frac{1}{2}$ W. and W. $\frac{1}{2}$ N.	1a	265	22	1878
Puysegur Point	.....	N.W. pt. of entr. to Foveaux Strait. Flashing light every 10 seconds intended.....	..	..	..	1878
Okarito Lagoon	43 14.2	One fixed green light on mast at entrance.....	..	..	..	1866
Hokitika River One fixed bright light	42 45.2 170 57.3	On mast on N. side of entrance of Hokitika or Brunner River. Anchor with it bearing E.S.E. $\frac{1}{2}$ or 3 miles off .....	..	..	..	1866
Grey River Bright, red and green lights	42 30. 171 11.	The entrance is marked by 2 fixed red lights on S. shore. A green lt. at extr. of works in progress, and a br. lt. on a mast on N. shore. Tidal Signals shown from mast on S. shore	..	..	..	1866 1878
CAPE FOULWIND One rev. br. lt. $\frac{1}{2}$ min.	41 46. 171 34.	Lighthouse of wood, white, 53 ft. high	2b	190	19	1876
Buller River	.....	Bright lt. from flagstaff, and red lt. from bea- con in one lead over the bar .....	..	..	6	1876

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BRITISH AMERICA.						
NEWFOUNDLAND.						
BELLE ISLE One fixed bright light	51 53. 55 22.3	White tower, 62 ft., on S. pt. of Id. April 1 & Dec. 15, from S.E. by S. southward to West, Fog Gun ev. hour. Depot for shipwrecks	1a	470	28	1858
CAPE NORMAN One br. rev. lt., 2 min.	51 38. 55 53.7	White tower, 40 ft. high, on N. coast of Newfoundland, Strait of Belle Isle	●	138	20	1871
Greenly Island One alternat. red & br. lt. every 3 min.	51 22.6 57 10.8	Lighthouse, 78 feet high, fawn colour, on S.W. pt. of Id. Lt. br. $\frac{1}{2}$ min., red $\frac{1}{2}$ min., br. $\frac{1}{2}$ min.; then eclips. $\frac{1}{2}$ min. Fog-gun ev. $\frac{1}{2}$ hour	●	100	15	1878
AMOUR POINT One fixed bright light	51 27.6 56 50.9	White tower, 109 feet high, on S.E. side of Forteau Bay, Coast of Labrador. From Apr. 1 to Dec. 15. Fog-whistle, 10 secs. ev. min.	2a	155	18	1858
POINT RICH One br. flash. lt., 15 s.	50 41.8 57 25.5	White tower, 40 ft. high, on North point of Ingornachois Bay	●	130	18	1871
Toulinguet Island One revol. bright lt. $\frac{1}{2}$ m	49 41.5 54 47.	Notre Dame Bay. Red brick tower; dwelling white on Long Point, North of island	●	335	27	1876
Cann Island One fixed bright light	49 35. 54 10.5	S. side of Fogo Id., entrance of Seldom-come-by Bay. Wooden tower	8a	85	12	1874
OFFEE WADHAM ID. One fixed bright light	49 35.7 53 43.5	Circular brick tower, on the island	a	96	12	1858
Greenspond Harbour One fixed red light	49 3.6 53 42.4	Granite tower on Puffin Island, near entrance. Obscured towards the land, from S. by W. to E. by S.	4a	55	10	1873
CAPE BONAVISTA One rev. br. and red lt.	48 41.9 53 5.2	Tower, 36 ft. high, striped red & white, vertically, on the cape. Lt. br. 15 secs., eclipsed 30 secs., red 15 secs., eclipsed 30 secs.	1b	150	16	1843
Catalina Harbour One fixed bright light	48 30.2 53 2.7	White tower, on S. side of Green Island, Catalina Harbour, in Trinity Bay. Shown from E.N.E., seaward, to S.W.	●	92	15	1857
Trinity Harbour One bright fixed light	48 22. 53 20.8	White tower on Port Point, W. side of entrance	8a	75	11	1874
BACALHAO ISLAND One rev. br. lt., 20 s.	48 8.6 52 47.8	Circular brick tower, 34 ft. high, half a mile from N. end of island. Hidden by land within 8 miles, when bearing N.N.E. $\frac{1}{2}$ E.	●	380	28	1858
Carbonear Island One fixed bright light	47 44.3 53 9.4	In Conception Bay. White buildings with red roofs	a	195	16	1878
HARBOUR GRACE 1. One revol lt, $\frac{1}{2}$ m. 2. Two fix. lts, vertical	47 42.7 53 8.2	1. Square house, red and white stripes, on N. end of island, at entrance; two bright, one red flash. Shown from S.S.W. to N.N.E. 2. On beach, N. side, 11 yds. apart. Bearing W. $\frac{1}{2}$ S. clear spit	●	150	20	1836 1869
CAPE ST. FRANCIS One fixed red light	47 48.5 52 47.2	White wooden building on S. point of entr. to Conception Bay. Fog-trumpet every min., blast 5 secs., silent 7 secs., blast 5 secs., silent 48 secs.	5a	123	12	1877
ST. JOHN'S 1. One fixed bright lt. 2. Two fixed red lights	47 33.8 52 40.3	1. Square stone tower, 39 ft. high, on Fort Amherst, S. entr. of harb. Shown seaward, from E.N.E. to S.S.W. Gun ev. hour in fogs 2. In one, N.W. $\frac{1}{2}$ W., lead through Narrows	●	110 225 50	12 6	1852 1863
CAPE SPEAR One rev. br. lt., 1 min.	47 31.2 52 36.9	Square tower, 38 ft. high, red & white bands, on the cape. Fog-trumpet, 7 secs. in ev. min.	●	264	22	1835
FERRYLAND HEAD One bright fixed light	47 0. 52 51.	Red brick tower. Dwelling white	..	200	16	1871
CAPE RACE One revol. lt., $\frac{1}{2}$ min.	46 39.2 53 2.6	Tower, 40 ft. high, on the cape, with S.E. side striped red and white, vertically. Shown seaward, from W.S.W. to E.N.E. A conical beacon, 50 yds. from lighthouse. A very powerful fog-whistle for 10 secs. in every min.	●	180	17	1856
CAPE PINE One bright fixed light	46 37.1 53 31.7	Round iron tower, 56 ft. high, with red and white bands, on the cape. Shown from E. by N. seaward, to N.W.	..	314	24	1851
CAPE ST. MARY One revol. lt., 1 min.	46 49.5 54 11.9	Circular brick tower, 40 ft. high, flashes red and bright alternately	1b	390	26	1860
GREAT BURIN ISLAND One rev. br. lt. ev. min.	47 0.4 55 8.1	Circular tower, 25 ft. high, on Dodding Head, S. end of the island	2b	430	27	1858

Note.—In case of a Fog-whistle being out of order, a Gun is usually substituted.

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
ST. PIERRE ISLAND (Galantry Head) Flashing lt., 20 secs.	46 46.1 56 9.1	(French.) Square white tower, 36 feet high. Flashes red, white, and white alternately. Steam fog-whistle, 6 secs. ev. min. Betw. March 15 and Dec. 1, also when mail is due	2c	210	36	1862
Canon Point One bright, one red lt.	46 47. 56 9.6	Outer lt. br., on rocks off Canon Point. In one, N.W., they lead through S. entrance	●	36	6	1862
St. Pierre Harbour One br. or red fix. lt.	.....	On Leconte Pt., N. side of S. entr. Shows br. in S. channel, and red thence to N.W. $\frac{1}{2}$ W.	●	64	3	.....
BRUNET ISLAND One br. flash. lt., 10 s.	47 15.5 55 51.8	Tower, 30 ft. high, on house on Mercer Head, S.E. extreme of island in Fortune Bay. Shown seaward, from W.N.W. to N.	●	408	25	1865
Garnish One fixed red light	47 14. 55 24.	White and red tower, S. side of Fortune Bay	..	20	..	1875
Bande de L'Arier One bright fixed light	47 49. 55 27.3	White tower on point of the beach at Bande de L'Arier or Bellorain Harbour, Fortune Bay	8a	35	8	1874
Harbour Briton One fixed bright light	47 27.5 55 47.8	White tower, 14 ft. high, on Rocky Point, W. side of entr. Red ray shown over Harbour Rock	8a	68	9	1873
Burgeo Islands One fixed red light	47 36.2 57 35.2	Wooden tower, with keeper's dwelling attached, on Boar Id., E. end of Burgeo Isles	6a	160	17	1874
Rose Blanche Point One fixed bright light	47 35.8 58 41.5	Granite tower on eastern head of the point ...	4a	95	13	1874
Port Basque One fixed red light	47 33.8 59 7.2	On Channel Head .....	..	..	..	1875
CAPE RAY One br. flash. lt., 10 sec.	47 37. 59 18.	White wooden building, 41 ft. high. Eclipses faint at long distances. Steam fog-whistle $\frac{1}{2}$ mile E. of lt.-ho., 10 secs. every min.	●	..	20	1871
GULF OF ST. LAWRENCE.						
ST. PAUL ISLAND North-East Point One fixed bright lt.	47 13.8 60 8.3	White tower, 40 ft. high, on a rock; obscured from S. by W. $\frac{1}{2}$ W. to W.S.W. Apr. 1 to Dec. 20	3a	144	20	1839
South-West Point One br. rev. lt., 1 m.	47 11.3 60 9.6	White tower, 40 feet high. Shown seaward, from N.N.W. to E., all the year round. A steam fog-whistle in Atlantic Cove	3b	140	20	1831
MAGDALEN ISLANDS GREAT BIRD ROCK One bright fixed lt.	47 50.7 61 8.3	White tower, 50 ft. high, on N.E. islet. April 1 to Dec. 31. Fog-gun every 30 minutes ...	2a	140	21	....
GRINDSTONE ID. One br. rev. lt. $\frac{1}{2}$ m.	47 23.3 61 57.2	Tower near Etang du Nord, on W. side of Id., Magdalen Ids. Fog-wh. 8 secs. every $\frac{1}{2}$ min., to be heard in calm weather 8 to 12 miles off	●	200	20	1874
AMHERST ISLAND One alternating lt.	47 13. 61 58.	White wooden building on South cape; bright and red lts., each for 30 secs.	●	..	20	1871
Entry Island One fixed red light	47 16.5 61 41.	White tower, 28 ft. high, on S.E. side of Id.	●	90	10	1874
ANTICOSTI ISLAND HEATH POINT One fixed bright lt.	49 5.3 61 41.8	Grey conical tower, 90 feet high, on point at S.E. end of island; must be kept open southward of Cormorant Point. Provision depot for shipwrecked people	●	110	15	1831
SOUTH POINT One br. flash. lt. 20 s.	49 4. 62 15.	White tower, 50 ft. high, on Bagot's Bluff, $\frac{1}{2}$ mile from S. pt. Steam fog-whistle 10 secs. every minute	●	75	14	1871
S.W. POINT One rev. br. lt., 1 m.	49 23.7 63 35.8	Conical grey tower, 75 ft. high. Shown from S.S.E., seaward, to N.W. by W.	●	100	15	1831
WEST POINT One fixed bright lt.	49 52.5 64 32.	Round white tower, 109 ft. high, on extreme W. point. A gun fired every hour in fogs and snow storms. A depot for provisions...	2a	112	15	1858
CAPE ROZIER One fixed bright light	48 51.6 64 12.	White tower, 112 ft. high, on the cape. A gun fired every hour in fogs and snow storms ...	1a	136	16	1858
CAPE MAGDALEN One rev. red and br. lt.	49 15.7 65 19.5	White wooden tower, 54 ft. high; bright and red flashes alternately every 2 minutes	●	147	17	1871
MARTIN RIVER One fixed bright light	49 13.3 66 9.	White wooden tower, 54 ft. high	●	125	17	1876
CAPE CHATTE One rev. br. lt., $\frac{1}{2}$ min.	49 5.9 66 45.5	Square white tower, 26 ft. high, on N.W. part of the cape	●	120	18	1871
CAROUSAL ISLAND One bright fixed light	50 5.7 66 22.7	White tower on one of the Seven Islands	●	200	20	1871
EGG ISLAND One br. rev. lt., $\frac{1}{2}$ min.	49 38. 67 10.	Tower, 30 ft. high, 1 cable from S. end of the island	●	70	15	1871
POINT DE MONTS One fixed bright light	49 19.6 67 21.9	Round white tower, 75 ft. high, $\frac{1}{2}$ mile N.E. of point. A Gun fired every hour in fogs and snow. Provision depot for shipwrecks .....	..	100	15	1830

BRITISH AMERICA. LIGHTHOUSES. RIVER St. LAWRENCE. 159

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RIVER ST. LAWRENCE.						
Matane	48 52.	Square white wooden building, 28 ft. high ...	●	65	10	1873
One fixed br. light	67 33.					
Metis Point	43 41.	White tower, 40 feet high, on Metis Point	●	56	13	1874
Br. & red rev. lt. 1 min.	68 2.3					
MANICOUGAN STRAIT LIGHTVESSEL	49 2.7	In 25 fathoms, at 1½ mile off southern edge of shoal. Lts. at unequal heights. Steam fog-whistle twice every 2½ minutes	a	27	8	1872
Two fixed bright lights	68 14.3			24		
Father Point	48 31.4	Rimousky. White tower on the point. Pilots	..	43	10	1859
One fixed bright light	68 27.3					
Port Neuf	48 38.	Bright fixed light from square wooden building on pier	●	40	11	1873
	69 6.					
BICQUETTE ISLAND	43 25.3	Grey stone tower, 65 ft. high, on W. point. Gun every hour during fogs	..	112	16	1844
One rev. br. lt., 2 min.	68 53.3					
RED ISLET BANK Lt.-V.	48 6.5	Painted red; lies in 10 fathoms N.E. from Red Islet. Steam fog-whistle 10 secs. in ev. min.	●	40	11	1871
Two bright fixed lights	69 31.					
RED ISLET	48 4.3	Round stone tower, 51 ft. high, on centre of islet, on S.W. point of the bank	..	75	12	1848
One fixed red light	69 32.9					
GREEN ISLAND	48 3.3	White tower, 40 ft. high, on N. point. A gun fired every ½ hour in fog and snow	..	60	13	1809
One fixed bright light	69 25.1					
BRANDY POTS	47 52.5	Brick tower, 39 ft. high, at S.E. end of islet, off S.E. side of Hare Island. Pass to S. ...	4a	78	10	1862
One bright fixed light	69 0.6					
Saguenay River	48 8.	1. On the centre of Lark Islet	..	35	10	1872
1. One fixed bright lt.	69 39.	2. Lighthouses, 22 ft. high, on Pt. Noire, 608 yds. E. and W. from each other. To clear Prince Shoal, Bar Reef, and Vache Shoal ...	●	117	12	1875
2. Br. fix. leading lts.			●	82	9	1875
LONG PILGRIMS	47 43.2	Brick tower, 39 ft. high, near centre of island	4a	180	12	1862
One bright fixed light	69 43.					
KAMOURASKA	47 38.	Wooden tower, 39 ft. high, near N.E. end of Grande Ile. Light revolves every minute...	●	166	12	1862
One bright revol. light	69 52.					
Origneaux Point	47 29.7	Square white wooden tower, 20 ft. high, on end of St. Denis Pier	●	34	8	1875
One fixed red light	70 1.8					
GOOSE CAPE	47 29.5	White tower, 42 ft. high	●	48	12	1876
One fixed bright light	70 13.8					
St. Paul Bay	47 24.8	White tower, 30 ft. high, on pier. N. shore of River St. Lawrence	●	36	10	1876
One fixed bright light	70 29.					
ST. ROQUE SHOALS						
Lower Lightvessel	47 22.2	Red; two masts and balls. In 3½ fathoms, on the N.E. part of the St. Roque Shoals, in the South Traverse. Fog-wh. 12 secs. in ev. m.	..	..	9	1836
Two bright fixed lts.	70 14.9					
Upper Lightvessel	47 20.	Two masts; lts. at unequal heights. In 3½ fms., on the N.W. edge of the shoal. Fog-bell ...	..	16	6	1871
Two bright fixed lts.	70 16.			24		
STONE PILLAR	47 12.4	White stone tower, 38 ft. high, 100 yds. from S. point of islet	..	68	12	1843
One br. rev. lt., 1½ min.	70 21.6					
Algernon Rock	.....	Lighthouse building near stone pillar	..	..	..	1878
Crane Island	47 3.	Wood tower, 37 feet high, 1½ mile from West point of the island	●	44	10	1862
One bright fixed light	70 33.					
Cape Rouge	47 7.7	1. At Cape Rouge, to lead betw. Traverse Spit and Brulé Bank	●	230	10	1875
1. Two bright fix. lts.	70 40.5	2. Square white tower on Monté du Lac	●	170	..	1875
2. One fixed bright lt.			●	175	10	1870
St. Francis, I. of Orleans	47 0.2	At E. end of island, to lead betw. W. Sands & Traverse Spit	●	110	10	1875
Two fixed bright lts.	70 45.3		●	30	..	1875
St. John, I. of Orleans	46 55.2	White tower on wharf, at St. John	●	27	8	1874
One br. rev. lt., ½ min.	70 53.5					
St. Lawrence Point	46 51.8	White tower	●	38	8	1869
One fixed bright light	71 2.					
Belle Chasse	46 56.	Wood tower, 30 ft. high, on E. end of island	●	76	10	1862
One bright fixed light	71 2.					
Quebec Harbour	.....	A wooden tower on Agate Island; guide to the harbour	..	32	10	1872
One bright fixed light						

Note.—The Lights in the Gulf and River St. Lawrence are shown only during the navigable season, generally from April 1st to December 20th.

The Lights on the upper part of the River St. Lawrence, and those on the great American Lakes, are omitted, as not being of service to oversea vessels.

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
NEW BRUNSWICK.						
CAPE GASPE	48 45.2	Square white wooden building, 30 feet high.	●	360	12	1873
One fixed red light	64 9.2	Steam fog-whistle near, 10 secs. every min.				
GASPE BAY						
Sandy Beach Pt. Lt.-V.	48 50.7	Painted red; off the end of the Sandy Beach	..	34	..	1871
One br., 1 red fix. lt.	64 24.5	Point, S. side of the entrance channel.....	..	40	..	1872
O'Hara Point	.....	Red lt., only when mail steamers are expected	..	20	..	....
Perce' Bay	48 30.5	Square white wooden tower, 20 feet high, on	●	138	13	1874
One fixed white lt.	64 13.	White Head. Fog-horn.....				
CAPE DESPAIR	48 25.7	Tower white, on the Cape, Chaleur Bay.....	●	90	15	1874
One br. rev. lt. $\frac{1}{2}$ min.	64 18.3					
CHALEUR BAY						
MACQUEBEAU POINT	48 12.5	White tower, on the South point of entrance,	●	56	12	1874
Rev. red & br. lt. 2 m.	64 46.2	Chaleur Bay Light red 1 min., bright 1 min.				
Paspebiac Point	48 0.8	White tower, 40 ft. high, near extremity of	●	55	13	1870
One bright fixed lt.	65 14.3	point, on N. side of bay				
Bathurst Harbour	47 39.3	On Alston Point, 356 ft. apart; outer bright	..	27	9	1871
One br., 1 red fix. lt.	65 36.6	lt. and inner red lt. kept in line, lead in.....		31	9	
Carsquette Island	47 49.7	Tower, 48 ft. high, on W. end of island, S.	●	52	13	1870
One bright fixed lt.	64 53.	side of bay				
Carleton Point	48 15.2	White tower, 28 ft. high. One fixed red lt. ...	●	32	7	1872
Heron Island	48 0.	White wooden tower, 20 ft. high, on E. side of	●	66	12	1876
One fixed bright lt.	66 8.	Heron Island, Chaleur Bay.....				
Dalhousie Harbour	48 3.7	Square white tower, 33 ft. high, on Bonami	●	49	13	1871
One bright fixed lt.	66 20.8	Point, S. side of entrance				
MISCOU ISLAND	48 1.	1. White tower, 74 ft. high, on Birch Point,	..	79	12	1856
1. One fixed red light	64 29.4	N. pt. of Id. Fog-whistle 5 secs. ev. $\frac{1}{2}$ min.	●	40	10	1875
2. Rev. br. lt. ev. min.		2. Tower, 28 ft. high, at Goose Lake, W. side				
Shippegan	47 43.	of island.....				
One bright fixed light	64 39.5	A white wooden building, 20 ft. high, on the	..	32	10	1873
		point of the sand bar, E. side of the entrance				
		to the gully				
Pocomche Gully	47 40.	Square white wooden tower, 37 ft. high.....	●	35	8	....
One fixed green light	47 46.					
Tracadie North Gully	47 33.3	On N. side of Gully. In line, lead in	●	39	12	1872
Two bright fixed lts.	64 51.4					
Tracadie South Gully	47 30.2	Upper lt.-ho. red, lower white. On N. side of	..	26	8	1873
Two bright fixed lts.	64 52.	Tracadie S. Gully. N. and S., 170 yds. apart.	..	19	..	....
		In line, mark channel into harbour				
MIRAMICHI BAY	.....	Red and bright lts. on Crab Island in line lead				
Tabisintac Gully		into Gully.....	●	30	7	1873
Negowae Gully		Two br. fix. lts. in line show entrance	●	35	10	1873
ESGUMENAC POINT	47 4.5	White tower, 58 ft. high, on point at S.E. side	3a	70	14	1841
One fixed bright lt.	64 47.6	of bay. Steam fog-whistle 10 secs. ev. min.				
Preston's Beach	47 4.8	White towers, 30 and 28 feet high, at Ship	●	66	10	1870
Two bright fixed lts.	64 55.	Channel entrance		55	10	
FOX ISLAND	47 8.8	1. On N.W. point of island; in one, show di-	..	60	10	
1. Two fix. br. lts.	65 2.	rection of Horse-shoe Channel				
2. Two fix. br. lts.		2. Leading lts. for Swashway Channel, E. and	●	32	10	1872
		W., $\frac{1}{2}$ mile apart.....				
Portage Island	47 9.8	White tower, 42 ft. high, on S. end of the	●	46	12	1870
One bright fixed lt.	65 2.7	island				
Inner Horseshoe Bar	47 8.	Schooner rigged; lies between Fox and Port-	●	35	8	1873
Lightvessel	65 3.	age Islands				
One fixed red light						
Oak Point	47 8.	White tower, 36 ft. high. In one, West, lead	●	60	10	1870
Two bright fixed lts.	65 15.	through the Narrows		40		
Bartiboque	47 5.	At Lower Newcastle. Bear N.E. and S.W.	●	140	10	1870
Two bright fixed lts.	65 23.	from each other		120	10	
Middle Island	47 3.5	Bright fixed light on N. side of island	●	45	7	1874
Sheldrake Island	.....	On white beacons, 500 yds. apart, on S. side	●	48	9	1873
Two bright fixed lts.		of island				
Huckleberry	.....	N.W. beacon, a conspicuous white structure;	..	..	..	1871
Two bright fixed lts.		S.E. beacon, on the E. side of a white barn.				
		In line, lead across the outer bar				
Malcolm River	.....	Fix. lts. on each of the beacons W. of Malcolm P.	..	..	..	1871

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
RICHMOND HEAD	46 39.7	Fix. br. lt. from white tower, 50 ft. high	4a	70	14	1864
Shediac Bay	46 19.2	Bright rev. lt., $\frac{1}{2}$ min., on Cassies Point.....	..	40	14	1872
Shediac Harbour	46 14.7 64 31.8	Approaching, keep two leading lts. on Shediac Id. in line. Small br. lt. on Duchene Wharf .....	..	..	..	....
Jourmain Island	46 10.	White tower, 40 ft. high, on island in Northum- berland Strait .....	..	72	14	1870
One br. flash. lt., 10 s.	63 50.					
Pugwash Harbour	45 52.5	Square white tower, 44 ft. high, on Seaman's or Fishery Point, E. side of entrance; red seaward, bright toward the harbour	●	48	8	1871
One fixed br. or red lt.	63 40.5					
Wallace Harbour	45 49.8	White building, 25 ft. high, on Mullin Point N. side of entrance	●	39	11	1873
One bright fixed light	63 24.3					
Amet Island	45 50.2	White square tower on island in Tatmagouche Bay entrance	●	44	12	1857
One bright fixed light	63 10.					
Caribou Island	45 44-	On N.E. end of island in Northumberland Strait .....	..	35	10	1868
One rev. br. lt., 1 min.	62 46.					
Pictou Harbour	45 41.4	Tower, 55 ft. high, striped red and white ver- tically, on S. point of entrance. Lights hori- zontal. Lower lt. red	●	65	11	1834
One bright, one red lt.	62 39.5			40		
PICTOU ISLAND	45 49.2	White tower, on E. point.....	..	52	12	1853
One fixed bright light	62 30.5					
CAPE GEORGE	45 52.6	Square white tower, 39 ft. high, on N.E. extr. o. Nova Scotia. Obscured W. of N.W.....	2b	400	25	1861
One rev. br. lt., $\frac{1}{2}$ min.	61 54.7					
Pomquet Island	45 39.7	On N.E. point of island, near Antigonish, in St. George's Bay. Obscured to West.....	●	50	10	1868
One fixed red light	61 44.5					
PRINCE EDWARD ISLAND.						
WEST POINT	46 37.5	Red and white banded tower, 67 ft. high; lt. shows 3 white and 1 red flash, each flash at- taining its greatest brilliancy every 22 $\frac{1}{2}$ secs.	●	66	13	1876
One rev. lt., 1$\frac{1}{2}$ min.	64 23.2					
Bedeque Harbour	.....	A bright lantern lt. on Green's Wharf.....	..	15	7	1856
Sea Cow Head	46 19.	Tower, on Salutation or Sea Cow Head, S.E. side of entrance to Bedeque Bay .....	..	80	14	1865
One fixed light	63 48.5					
Charlottetown	46 11.6	On W. side of entr., vertical, 21 ft. apart; upper br., lower red lt. Lower lt. only visible in direction of bell-buoy	●	56	12	1851
One br., one red fix. lt.	63 7.5		●	35	3	1876
HILLSBORO' BAY	46 3.2	White brick tower, 50 ft. high, on Prim Point, S.E. of bay	●	68	13	1845
One fixed bright light	63 2.1					
SOUTH POINT	62 44.5	Br. lt. from tower, 40 ft. high, on Wood Id....	4a	80	15	1876
Little Sands	62 39.	Red lt., from window of house, 20 ft. high ...	●	50	5	1877
Murray Harbour	.....	Two fixed lights, 1 mile apart .....	..	..	5	....
CARDIGAN BAY	46 8.8	White tower, 49 ft. high, on Panmure Head, S. entrance of Georgetown Harbour. Kept open of Terrace Pt., clears Reef off Bear Cape	●	89	14	1853
One fixed bright light	62 27.7					
Georgetown	46 9.9	Square white tower, on St. Andrew Point, S.W. side of entrance	●	36	8	1866
One bright fixed light	62 31.4					
EAST POINT	46 27.1	Octagonal white tower, 60 ft. high, on S. side of E. point	●	130	18	1867
One br. rev. lt. ev. 3 m.	61 58.2					
St. Peter's Harbour	.....	Two fixed lights .....	..	..	6	1868
Tracadie Harbour	.....	Two fixed red lights in line S.W. by S.	●	40	..	....
Little Rustico	.....	Two leading lights on W. side of entrance.....	..	..	..	....
Grand Rustico	.....	Upper lt. br., lower red, vertical, 5 yds. apart; seen only in channel .....	..	..	..	....
Grenville Harbour	.....	Upper red, lower br. lt.; seen only in channel	..	..	..	....
Richmond Bay	46 34.7	On Bill Hook, or Fishery Id., N. side of entr., E. by S. and W. by N., 400 yards apart	●	50	12	1866
Two fixed bright lights	63 42.5		..	18	6	....
Casamique	46 48.4	White towers on S.W. pt. of Sandy Id., N. side of entr. Main lt. br., range lt. red, E. by S. and W. by N., 217 yds. apart.....	●	45	12	1856
Two fixed lights	64 2.3		..	18	6	1876

Note.—The lighthouses of Nova Scotia and New Brunswick, where necessary, are painted with black or red stripes, &c., to distinguish the towers from the land; as, after the snow is gone off the land, the accumulations against the fences, which generally run at right angles to the coast, and which continue for some time after it has disappeared from the fields themselves, have exactly the appearance of a white tower, and frequently mislead even those acquainted with the coasts.

Lighthouses.

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Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Tignish River	46 57.5	High lt. from mast on S. side of harbour entr.,	●	26	6	1877
Two fixed bright lts.	63 59.3	low lt. on end of N. breakwater, 1,035 ft. E. of high lt. In line lead up to harbour	●	17	6	
NORTH POINT	47 3.8	On the low N. extreme of island. A reef ex-	..	80	12	1866
One br. rev. lt. ev. min.	63 59.3	tends nearly 2 miles to northward				1875
CANSO GUT						
North Entrance	45 41.7	White tower, 35 ft. high, on W. side, 120 yds.	●	110	18	1842
One fixed bright lt.	61 28.9	in-shore.....				
Ship Harbour	45 36.7	White tower, 24 ft. high, on Stapleton Point,	●	44	7	1870
One red fixed light	61 22.	S. side of the harbour				
South Entrance	45 31.5	Tower white, with black diamond, on Eddy	●	25	8	1851
Two fixed bright lts.	61 14.6	Point. Lights horizontal, 8 yards apart.....				
CAPE BRETON ISLAND.						
Port Hood	46 0.	White tower, S. entrance. Light red to N.,	●	54	10	1854
One fixed br. or red lt.	61 31.6	and bright to S.				
Sea Wolf or Margaree Id.	46 21.5	White tower on summit, or middle of Id. On	●	298	21	1854
One fixed bright light	61 15.5	near approach, light is obscured by cliffs ...				
CHETICAN ISLAND	46 36.5	White building, 24 ft. high, with black ball,	●	149	20	1872
One br. rev. lt., $\frac{1}{4}$ min.	61 3.	on S.W. end of island				
MONEY POINT	47 2.2	White wooden tower, 36 ft. high. Lt. shows	●	74	14	1875
Revolving light	60 23.5	alternately red and bright every 45 secs. ...				
INGANISH ISLAND	46 41.3	White wooden tower, 40 ft. high, on island ...	5a	237	15	1871
One bright fixed light	60 20.0					
St. Anne's Harbour	46 17.5	White tower, 30 feet high, on the N. side of	●	24	8	1871
One bright fixed light	60 32.3	Beach Point, at entrance.....				
CIBOUX ISLAND	46 23.2	On Bird Island, $\frac{1}{4}$ mile from N. end.....	●	77	14	1864
One rev. red lt., 1 min.	60 22.5					1875
Black Rock Point	46 19.	Square white tower, 23 ft. high, on S. side of	●	45	10	1868
One bright fixed light	60 24.	entrance to Big Bras d'Or				
Anconi Point	46 19.5	Square white wooden tower, 20 ft. high, on	●	91	11	1874
One fixed red light	60 17.2	N. side o. entrance to Little Bras d'Or Lake				
SYDNEY	46 16.2	1. Tower, 51 ft. high, red and white, vertical,	●	70	14	1832
1. One fixed bright lt.	60 7.3	on Flat Point, E. side of Spanish Bay.....	●	30	9	1872
2. One fixed red light		2. White building, 20 ft. high, on W. end of				
		S.E. bar of the harbour				
Bridgeport Harbour	46 14.2	On Lingan Head, N. side of entrance to Bridge-	●	50	10	1874
One fixed red light	60 2.3	port Harb. Square white tower, 20 ft. high				
FLINT ISLAND	46 11.	White tower, 43 ft. high. Flash every 15 secs.	●	65	12	1856
One bright rev. light	59 45.8					
SCATARI ISLAND	46 2.2	White tower, 70 feet high, on Trap Rock, at	●	90	15	1835
One rev. bright light	59 40.3	N.E. point. Bright, 1 min.; dark, $\frac{1}{4}$ min. Should not be approached within 2 miles ...				
Menadou	46 0.5	White tower, 40 ft. high, at W. end of Scatari	●	90	9	187
One fixed red light	59 47.5	Island.....				
LOUISBURG	45 54.6	Tower, 35 ft. high, white with black vertical	●	85	16	1842
One fixed bright light	59 57.2	stripes, on N. side of entrance.....				
GUYON ISLAND	45 46.2	Tower, black stripe on white, 54 ft. high, 230	●	74	12	1877
One rev. red lt. ev. $\frac{1}{2}$ m.	60 6.3	yards within West extreme of island				
Onetique Island	45 36.7	In Lennox Passage, from square white wooden	●	78	9	1874
One fixed red light	60 57.3	tower on S. point of island				
CAPE ROUND	45 34.7	Square white wooden tower, 28 ft. high, at E.	●	92	14	1874
One fixed white light	60 53.	end of Madame Island				
Green Island	45 28.8	White tower, 31 ft. high, on island near S.E.	..	70	14	1865
One revolving light	60 53.7	end of Madame Island. Lt. red and br. for $\frac{1}{4}$ min alternately				
Petitdegat Inlet	45 29.4	Wooden lighthouse, white, 31 ft. high, on Big	●	38	10	1877
One fixed red light	60 57.8	Arrow Islet, East point of entrance to inlet...				

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Arischat Harbour One fixed bright light	45 29. 61 1.9	White tower, S. entrance; on Marache Point, Madame Island .....	..	24	8	1861
West Arischat Harbour One fixed red light	45 30.3 61 3.1	White building, 28 ft. high, on N. end of Jerseyman Island. Guide through Crid Passage	●	39	9	1872
Creighton Island (One rev. lt. ev. 40 secs.)	45 30.7 61 6.	At S.W. side of Madame Island; square white wooden tower, 20 ft. high	●	..	10	1874
Canso Harbour One fixed red light	45 21. 60 58.5	White building, 28 ft. high, on N.E. part of Hart Island	●	42	9	1872
NOVA SCOTIA.						
SABLE ID., East End One fixed bright light	43 58.5 59 46.	Octagonal tower, 86 ft. high, painted altern. white and brown, $\frac{1}{2}$ mile from E. end of Id.	2a	128	17	1873
West End One bright rev. lt.	43 57. 60 8.	Octagonal white tower, 98 ft. high, 17 miles from that on E. end. Shows 3 br. flashes at $\frac{1}{4}$ min. intervals, then eclipsed for $\frac{1}{4}$ min. Steam fog-whistle discontinued (1878).....	●	123	17	1874
Guysboro Harbour One bright fixed light	45 22.8 61 29.2	White tower, 20 feet high, on West side of entrance, near Peart Point	●	30	8	1846
CAPPE CANSO Two fixed bright lights	45 19.8 60 55.5	In one tower, 60 ft. high, striped red and white horizontally, on the N. part of Cranberry Island. Lts. vertical, 12 yds. apart. A steam fog-whistle for 8 secs. in every min.	●	75 40	15 9	1815
WHITE HEAD ISLAND One br. rev. lt., 20 secs.	45 12. 61 8.	White tower, 35 feet high, on S.W. extremity	●	55	11	1853
Berry Head One fix. red and br. lt.	45 11.7 61 18.7	Red and white striped tower. 36 ft. high, on W. side of entrance to Tor Bay; lt. red seaward, bright to northward	●	51	10	1876
Green Island One bright fixed light	45 6. 61 32.5	Square white building, 28 ft. high, on S. point. Guide to Country and Fisherman Harbours	●	51	12	1873
Isaac Harbour Two fixed bright lts.	45 10.3 61 39.	Shewn on Holly Point, 20 ft. apart, W. side of entrance to harbour .....	..	..	..	1877
Liscomb Harbour One revolving lt., 2 m.	44 59.3 61 57.8	On W. side of Liscomb Island, E. side of entr. Flashes alternately red and bright	●	64	12	1872
BEAVER ISLANDS One rev. br. lt., 2 min.	44 49.6 62 20.2	Tower, 35 ft. high, white, with 2 black balls, on S.E. pt. of E. Beaver, or William Island	●	70	12	1846
Pope Harbour One fixed red light	44 47.7 62 38.8	White wooden tower, 37 ft. high, on W. point of Harbour Island	●	45	9	1877
EGG ISLAND One revolving lt., 1 m.	44 39.8 62 51.5	Tower, 45 ft., bl. & wh. str. Flashes red & br. alternately. Dangerous reefs around it.....	●	85	15	1865
HALIFAX						
Devil Island Two fix. leading lts.	.....	E. and high lt.-ho., 53 ft. high, E. $\frac{1}{2}$ N., 175 yds. from low lt.-ho. High lt. E. by N., open S. of low lt., leads S. of Thrum Cap Shoal Pilots	●	59	13	1852
Sherbrook Tower One fixed bright lt.	44 36.1 63 31.9	On Manger Beach, E. side of entrance. Circular tower, 48 ft. high, white, with red roof. Fog-bell 7 times every minute	●	58	10	1815
George Island Two fixed bright lts.	.....	Tower, drab, 21 ft. high, on W. side of Id.; lts. 20 ft. apart, vertically; open W. of Manger Beach lt., N. $\frac{1}{2}$ W., leads W. of Thrum Cap Shoal. Two lights are also shown on Citadel Hill flagstaff, elevated 240 ft.	●	..	12	1876
Chebueto Head One br. rev. lt. 1 m.	44 30.3 63 30.8	White building on the head, W. side of entr. to harb. Whistle-buoy, $1\frac{1}{2}$ m. N.E. $\frac{1}{2}$ E. of head, and another S.E. $\frac{1}{4}$ S. $\frac{1}{2}$ miles from head ...	●	132	15	1872
SAMBRO ISLAND One fixed bright light	44 26.2 63 33.7	White tower, 60 ft. high, on middle of island. Fog Horn sounded 10 secs. in every minute	●	115	20	1758
BETTY ISLAND (One rev. red lt., 2 min.)	44 26.3 63 45.8	White tower, with two red bands	●	75	14	1875
St. Margaret's Bay One fixed red light	44 29. 63 57.	White tower, 26 ft. high, on Peggy's Point, E. side of entrance	●	65	10	1868
MAHONE BAY						
Green Island One revolving light	44 23. 64 2.7	Square white wooden tower, 28 ft. high. Lt. shows br. & red flashes alternately ev. $1\frac{1}{2}$ m.	●	59	13	1878
EAST IRONBOUND I. One fixed bright lt.	44 26.2 64 4.5	New white tower, 46 ft. high, on S.E. part of island, at entrance of Mahone Bay	a	150	16	1867 1871
Hobson's Nose One fixed red light	44 24.9 64 13.8	White tower, 29 ft. high	●	68	11	1872

Name and Character of Light.	Lat. N. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
MALAGUASH or LUNEN- BURG BAY	44 20. 64 7.	Lts. in one red tower, 52 ft. high, on E. pt. of Cross Island. Upper light bright, 45 secs.; dark, 15 secs.	●	90 56	14 8	1832
One revolving lt., 1 m.		Lower fix. lt. Pilotstation. A refuge harbour				
One fixed bright light						
Battery Point	44 21.7 64 17.6	On the top of a white dwelling house.....	●	50	10	1864
One bright fixed lt.						
W. IRONBOUND ID.	44 13.7 64 16.3	White tower, 29 feet high, on S. side of West Ironbound Island	●	70	13	1855
One revolving lt., $\frac{1}{2}$ m.						
Le Have River	44 17.3 64 21.	White wooden tower, 35 ft. high, on Fort Point, West side of entrance to river	●	48	8	1877
One fixed red light						
Mosher Island	44 14. 64 18.7	White tower, 26 ft. high, on S.E. end of island, on W. side of entrance to Le Have River ...	●	55	10	1868
One fixed red light						
Metway Head	44 5.7 64 32.2	Tower, 23 ft. high, white, with black square, on W. side of entrance.....	●	44	10	1851
One fixed bright light						
LIVERPOOL BAY						
Coffin Island	44 2. 64 37.6	Tower, 50 ft. high, red and white bands, on S. point of the island	●	80	16	1812
One rev. br. lt., 2 m.						
Fort Point	44 3.7 64 39.	Square white building, to be left on the port hand in entering.....	●	30	5	1855
One fixed red light						
LITTLE HOPE ISLET	43 48.5 64 47.2	Square white tower, 26 ft. high, on middle of island, to S.E. of the entrance of Port Jolie	●	40	10	1865
One rev. red lt., 1 min.						
Port Mouton	43 55. 64 48.	White building, 20 ft. high, on N. point of Spectacle Island.....	..	47	10	1873
One fixed red light						
Port L'Hebert	43 48.7 64 55.4	White tower, 29 ft. high, at Shingle Beach, E. side of Port L'Hebert.....	●	33	9	1872
One fixed red light						
RUGGED ISLAND HARB.	43 39.2 65 5.1	1. White tower, 39 ft. high, on the Gull Rock, 2 $\frac{1}{2}$ miles S. of harbour entrance	●	51 66	10 9	1853 1872
1. One fixed red lt.		2. White tower, 29 ft. high, on Carter Island	●			
2. One fixed red light						
CAPE ROSEWAY	43 37.2 65 15.7	Vertical, in one tower, 77 feet high, striped black and white vertically; on S.E. point of Mc Nutt's Island, S. of Shelburne	●	120 65	18 10	1788 1858
Two fixed bright lights						
Negro Island	43 30.9 65 21.	White tower, 29 feet high, on N.E. side of island. Alternate red and bright flashes ...	●	48	12	1872
One revolving lt., 1 m.						
Shelburne Harbour	43 41.2 65 19.	White building, 20 ft. high, on Sand Point, E. side of harbour	●	67	11	1873
One fixed red light						
Port Latour	43 26.9 65 28.2	Tower, 35 ft. high, white, with black ball, on Baccaro Point, W. side of entrance.....	●	49	12	1850 1870
One fixed red light						
Barrington Bay Lt.-ves.	43 31.1 65 34.4	Moored in 6 fms., $\frac{1}{2}$ miles N.N.W. $\frac{1}{2}$ W. from Baccaro Pt. lt.-ho. Vessel painted red	●	30	7	1875
One fixed bright light						
CAPE SABLE	43 23.3 65 37.2	White tower, 50 ft. high, on S. pt. of islet, S. of Cape Sable Id. Lt. via 15 secs., eclipsed 25 secs. Steam Fog-whistle 10 secs ev. min.	●	53	12	1861 1870
One br. rev. lt., $\frac{1}{2}$ min.						
Shag Harbour	43 28.4	One fixed red lt., on N.W. pt. of Stoddard Id.	●	22	9	1877
Bon Portage Island	43 27.2 65 44.7	Square white wooden tower, 28 ft. high, on S. point of island	●	46	12	1874
One rev. red lt. 1 min.						
Pubnico Harbour	43 35.7	One fixed lt. on Beach Point, S.E. side of entr.	●	28	8	1874
White Head Island	43 39.7 65 52.	White tower, 28 ft. high, on S. point of island, to guide vessels into Argyle Harbour	●	115	10	1874
One fixed red light						
Tusket River	43 42.1 65 57.2	Horizontally, 24 ft. apart, on each end of a house, on S.W. pt. of Big Fish Id., at entr.	●	..	12	1864
Two bright fixed lights						
BAY OF FUNDY.						
SEAL ISLAND	43 23.6 66 0.9	White tower, 60 ft. high, $\frac{1}{2}$ of a mile inland of South point. Powerful steam fog-whistle. Blonde Rock lies $\frac{3}{4}$ miles to S. by W.	●	98	18	1830
One fixed bright light						
CAPE FOURCHU	43 47.5 66 9.8	Tower, 59 ft. high, striped red and white ver- tically, on S. point of E. cape. Fog-whistle	●	117	20	1839
One rev. br. lt., $1\frac{1}{2}$ m.						
Yarmouth Harbour	43 48.5 66 8.7	On a beacon, on reef extending from S.W. point of Bunker Id., E. side of entrance. Shown to S. from S.W. by S. to S. $\frac{1}{2}$ W., and to N.W. from N. $\frac{1}{2}$ W. to N.W. $\frac{1}{2}$ W. ...	●	27	8	1874
One fixed red light						
CAPE ST. MARY	44 5. 66 10.5	White building, 46 feet high, on East side of entrance to St. Mary's Bay.....	●	100	12	1868
Altern. red & br. lt. 30 s.						
Meteghan River	44 13.2 66 8.7	On end of breakwater. Lt.-ho. painted in red stripes on seaward side; to be left close to starboard in entering.....	..	21	6	1875
One fixed green light						

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles,	Year established.
Church Point One fixed <i>red</i> light	44 20. 66 7.5	White tower on point, on E. side of St. Mary Bay.....	●	36	8	1874
Sissibou River One bright fixed light	44 26.5 66 1.3	White tower, 33 ft. high, on S. side of entrance to river, E. side of St. Mary's Bay	●	36	8	1871
BRYER ISLAND One fixed bright light	44 14.9 66 23.5	White tower, 55 ft. high, on W. point. S.W. Ledge lies 4 miles to S.S.W. from the light. Steam fog-whistle, 3 blasts every minute ...	●	66	15	1809 1832
Peter Island Two fixed bright lights	44 15.5 66 20.9	On white house, at South entrance to Grand Passage. Lights horizontal, 8 yds. apart. Shown through the passage to N.N.E., and southward from S.W. by W. to S.S.E. & E.	●	40	10	1850
Petit Passage One revolving lt., 1 m.	44 24.3 66 13.	Light white and red alternately; on house on Boar's Head, S. side of N. entrance. Shown from E. by S. to S.W. by W.....	●	..	..	1864
DIGBY, or ANNAPOLIS One fixed light	44 40.8 66 47.3	Tower, 22 ft. high, striped vertically, on Point Prim, S. pt. of entrance to Annapolis Basin. Powerful steam fog-whistle 8 secs. ev. min.	●	76	13	1817
Marshall Cove One fix. br., one <i>green</i> lt.	44 56.9 65 16.	Vertically, on end of pier at Fort Williams, 21 ft. apart. Upper bright lt., lower green lt. Shown northwards, from W.S.W. to E.N.E.	●	60 57	10 5	1850
Margaretville Two fixed <i>red</i> lights	45 2.9 65 4.	Square building, black and white bands. Lts. vertical	●	30 27	8	1859
BLACK ROCK POINT One fixed bright light	45 10.2 64 46.	White tower, 35 ft. high. A steam fog-whistle is sounded from Cape D'Or, 7 m. to northwd.	●	45	12	1848
Horton One fixed bright light	45 6.3 64 13.2	White tower, 20 ft. high, on the bluff; on W. side of entrance of River Avon	●	92	20	1851
Walton Harbour One fixed <i>red</i> light	45 14. 64 0.8	White building, 20 feet high, on N. side of entrance	●	60	10	1873
Burn Coat Head One bright fixed light	45 18.3 63 48.5	Square white tower, 50 ft. high, on S. side of entrance to Cobequid Bay, Basin of Mines...	●	75	13	1859
Spencer Point One bright fixed light	45 23.5 63 36.	On the N. side of Cobequid Bay. (Doubtful)	●	35	6	1863
Parrsborough One fixed bright light	45 23. 64 19.	White tower, 33 ft. high, on Partridge Island, W. side of river	●	37	9	1852
Apple River One fixed bright light	45 28.3 64 51.5	White house, on Cape Capstan, or Hetty Point	●	64	10	1848
Crinestone Island One fixed bright light	45 43.2 64 37.4	White tower, on W. part of Id., in Chignecto Channel. Fog-trumpet, 4 blasts every min.	●	60	12	1859
Hillsborough	45 55.3 64 37.8	Beacon lt. from tower, 23 ft. high, on wharf, Petit Coudiac River	●	14	5	1876
CAPE ENRAGE One fixed bright light	45 35.6 64 46.9	Square white tower, 23 ft. high, on the pitch of the cape. Shown from N.W. to N.E. Steam Fog-whistle 8 secs. every minute	●	121	15	1840
QUACO One rev. br. lt., 20 secs.	45 19.3 65 31.9	Tower, 46 ft. high, red and white horizontal bands, on rock off the head. Fog-bell ev. 12 s.	●	58	15	1835
CAPE SPENCER One revolving lt., 1½ m.	45 12.1 65 55.	Square white building, 35 ft. high. Flashes alternately red and white	●	207	20 10	1873
ST. JOHN HARBOUR						
Partridge Island One fixed bright lt.	45 14.1 66 3.1	Tower, 40 ft. high, striped vertically red and white. Steam-whistle, 10 secs. in ev. min. Bell buoy near E. side of Partridge Reef	●	119	20	1791 1832
Negro Point One fixed <i>red</i> light	45 14.3 66 3.3	White lt.-ho., 35 ft. high, 50 ft. within extr. of breakwater running out 720 yds. S.S.E. from Negro Point.....	●	36	8	1878
Beacon Tower One fixed bright lt.	45 15.1 66 3.1	Striped vertically, white and black, on South extreme of spit, W. side of harbour.....	4a	35	10	1823 1868
POINT LEPREAU Two fixed bright lights	45 3.5 66 27.6	Tower, 31 ft., red & white bands; lts. vertical, 28 ft. apart. Shown from W.N.W., southwd., to E. by N. Fog-whistle, 2 bl. once ev. min.	●	81 5	15	1831
Beaver Harbour One fixed bright light	45 3.7 66 44.0	White tower, 36 ft. high, on Drew Point, W. side of harb.; lt. vis. to southward betw. heads of harb. Good anchorage E. by N. from it...	●	45	10	1876
SOUTH WOLF ISLAND One br. rev. lt., 1½ min.	44 56.5 66 44.2	White lighthouse, 35 ft. high, on S.E. point of island.....	●	111	18	1872
L'Etang Harbour 1. One fixed <i>green</i> lt. 2. One fixed <i>red</i> light	45 2.3 66 48.7	1. White lt.-ho., 31 ft. high, on W. extr. of Pea Island, E. side of entrance to harbour... 2. White tower, 30 ft. high, on W. pt. of Bliss Island, in the entrance of the harbour.....	● ●	51 45	10 10	1878 1872
CAMPOBELLO ISLAND One fixed bright light	44 57.7 66 53.9	Tower, 34 ft. high, white, with red cross, on N. point of Head Harbour	●	64	15	1829

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Passamaquoddy Bay	45 7.	White wooden tower, 29 ft. high, on Millie Bluff, at entrance of Magaguadavic River.	●	130	15	1876
One fixed bright light	66 54.5	Shoal extends 250 yds. E.N.E. of lt.-house				
Port St. Andrew	45 4.2	1. White tower, 22 ft. high, on N. pt. of entr.	●	35	10	1833
1. One fixed br. lt.	67 4.	2. White-frame tower on Tongue Shoal, 1½ m. S.E. by E. from Port St. Andrew light .....	..	40	10	1876
2. One fixed br. lt.						
St. Croix River	45 10.	On Spruce Point and St. Mark Point, N. side of river. Brown towers, 28 ft. high	●	32	..	1876
Two fixed bright lts.	67 10.		●	32	..	1876
GREAT MANAN ISLAND	44 45.9	White tower, 50 ft. high, on N.E. point of Id. Shown eastward, from S.W. to N.W. Stea fog-whistle, 3 blasts ev. min., on N.W. point of island.....	●	148	17	1861
One fixed bright light	66 44.1					
MACHIAS ISLANDS	44 30.1	White towers, on East Id. Lts. in one, N.W., clears Murr Ledges 4 miles to southward. Steam fog-whistle, 1 blast every ½ minute...	3a	66	10	1878
Two fixed bright lights	67 6.2		3a	58	..	1832
GANNET ROCK	44 30.6	Tower, 41 feet high, striped black and white, vertically; fl., with flashes of 5 & 45 secs. ev. min. A gun in answer to signals during a fog. Reefs extend 4 miles to eastward ...	4c	66	12	1831
One fix. & flash. lt., 1 m.	66 47.					1867

UNITED STATES.

MAINE.

WEST QUODDY HEAD	44 48.9	Tower, 55 ft., red & white bands, near Eastport, S. side of entr. Shown from N. 63° W. to S. 57° W. A Fog-whistle, 8 secs. ev. min.	3a	133	17	1808
One fixed bright light	66 56.					1858
Little River	44 39.8	White tower, 28 ft. high, on island, at entrance. Flash every 1½ min. Shown from N. 63° E. to S. A Fog-bell twice in a minute.....	5d	40	12	1855
One fixed & flashing lt.	67 12.1					
Machias Bay	44 39.	White tower, 36 ft. high, on S. end of Avery Rock. Fog-bell	●	59	10	1875
One fixed red light	67 21.					
Libby Island	44 34.1	Grey tower, 35 ft. high, on island, entrance to Machias Bay. Fog-bell	4a	52	13	1822
One fixed bright light	67 22.					1856
MOOSE PEAK	44 28.5	White tower, 40 ft. high, on Mistake Island, S. of Moose Peak, or Moose-a-bee Island. Whistle-buoy S. by E. 2 miles from lt.-ho....	2b	65	14	1826
One rev. br. lt., 30 secs.	67 31.9					1856
Nash's Island	44 27.8	White tower, 28 ft. high, on E. side of Pleasant River	4d	47	12	1858
One fixed red light	67 44.8					
Narraguagus Bay	44 28.	Wh. tower, 29 ft., on S.E. pt. of Pond Id. Shown eastward, from N. ½ E. to S.W. by S. Fog-bell	5a	45	12	1856
One fixed bright light	67 49.8					
PETIT MANAN	44 22.	Grey tower, 109 ft. high, on S. end of island. Flash ev. 2 min. Dangerous rocks lie from 2 to 5 miles off. Fog-whistle in each min., 2 bl. of 5 secs, at intervals of 8 and 42 secs.....	2d	125	17	1855
One fixed and flash. lt.	67 51.8					
Prespect Harbour	43 24.2	From old light-tower on East entrance point, ashes red and white alternately	5b	40	11	1870
One red & br. rev. lt. ½ m.	68 0.8					
Winter Harbour	44 21.7	On S. point of Mark Island, Frenchman Bay. Shown from N. by E. ½ E. to N. by W. ½ W.	5a	37	11	1856
One fixed bright light	68 4.9					
Frenchman Bay	44 21.3	White tower, 56 feet high, on highest part of Egg Rock. Fog-bell	●	76	14	1875
One fixed red light	68 8.					
MOUNT DESERT	43 58.	Grey tower, 60 ft. high, on the rock. Fog-bell	3a	75	14	1857
One fixed bright light	68 7.7					
BAKER'S ISLAND	44 14.4	White tower, 37 ft., on islet S. of Little Cranberry Id., off Mount Desert Id. Flash ev. 1½ m.	4d	105	15	1855
One fixed and flash. lt.	68 11.9					
Bear Island	44 17.	Red tower, 22 ft. high, on Cranberry Island, entrance of Soames Sound	5a	97	15	1839
One fixed bright light	68 16.2					1856
Bass Harbour Head	44 13.3	White tower, 26 ft. high, E. side of entrance, S. end of Mount Desert Island	5a	56	13	1853
One fixed red light	68 20.2					
Burnt Coat Harbour	44 8.	Brick towers, 32 and 17 ft. high, at entrance of Refuge Harbour, Swan Island. Beacon lts. in one, N.E. ½ N., 100 ft. apart, lead in	4a	75	14	1872
Two fixed bright lights	68 27.		5a	42	10	....
Great Spoon Island	.....	On E. side of Isle au Haut. (Building).....	..	..	..	....
<i>Building</i>						
Fly, or Green Island	44 14.9	White tower on S.E. point of island, in S.E. entrance to Edgemoggin Reach.....	5a	26	9	1856
One fixed bright light	68 29.9					
SADDLEBACK LEDGE	41 0.8	Tower, 36 ft. high, lower part white, on S.W. end of island, in entr. of Isle au Haut Bay	5a	51	13	1839
One fixed bright light	68 43.6					1856

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
PENOBSCOT BAY						
Heron Neck One fixed red light	44 1.5 68 51.4	Red tower, 34 ft. high, on S. point of Green's Island, at S.E. side of entrance to Penobscot Bay.....	5d	92	10	1853
Widow Island <i>Proposed</i>	.....	Proposed light.....	..	..	..	....
Deer Island One fixed bright lt.	44 8.1 68 41.9	White tower on Mark Island, Isle au Haut Bay.....	4a	52	12	1857
Eagle Island One fixed bright lt.	44 13.1 68 45.7	White tower, 30 ft. high, on N. point of island, in N.E. entrance to Penobscot Bay, from Isle au Haut Bay	4a	106	15	1837
Pumpkin Island One fixed bright lt.	44 19. 68 45.	On island off N.W. end of Little Deer Island, N.W. end of Edgemoggin Reach. Guide to Buck Harbour.....	5a	27	9	1854
MATINICUS ROCK Two fixed bright lts.	43 47. 68 51.	Grey towers, 40 and 50 ft. high, N.N.W. and S.S.E., 60 yds. apart. Steam fog-whistle every $\frac{1}{4}$ min. or fog-bell.....	3a	90 85	15	1857
Whitehead Island One fixed bright lt.	43 58.7 69 7.1	Grey tower, 34 ft. high. Shown from North to W. $\frac{1}{2}$ S. Steam fog-whistle every minute	3a	70	13	1856
OWL'S HEAD One fixed bright lt.	44 5.5 69 2.3	West side of entr. to Penobscot Bay. Shown from N. 76° W. to S.S.W. Whistle-buoy E. by S. $\frac{1}{2}$ S. of lighthouse, in 20 fathoms.....	4a	100	16	1825 1856
Brown's Head One fixed bright lt.	44 6.7 68 54.3	White tower on South Fox Island	5a	39	12	1856
Rockport Harbour One fixed red light	44 10. 69 3.	Square brick building, painted white, on Indian Island	5a	42	11	1875
Negro Island One fixed bright lt.	44 12.1 69 2.6	White tower, 28 ft. high, S. side of entrance to Camden Harbour	4a	52	12	1835 1856
Grindels Point One fixed bright lt.	44 16.9 68 56.2	Red tower, 28 ft. high, on N. side of Gilkey Harbour, Long Island.....	5a	39	11	1856
Dice's Head One fixed bright lt.	44 22.9 68 43.8	White tower, 42 ft. high, near Castine, W. side of entrance	4a	130	17	1850
Fort Point One fixed bright lt.	44 28. 68 48.4	On S.W. side of entrance to Penobscot River	4a	103	16	1857
Tenant's Harbour One rev. red lt., 1 min.	43 57.6 69 10.8	N.E. side of S. island. Shown from N. 69° E. to S.W. $\frac{1}{2}$ S.	5a	66	13	1857
Marshall's Point One fixed bright light	43 55. 69 15.3	At entrance to Herring-gut Harbour. Shown from E. $\frac{1}{2}$ N. to N. by the E. and South	5a	31	10	1857
MANHEIGAN ISLAND One rev. br. lt., 1 min.	43 45.9 69 18.6	Grey tower, 36 ft. high, on S. side of island. A steam fog-whistle on Mananas Island, half a mile to W. of lighthouse; two blasts every minute	2b	175	19	1851
Franklin Island One fixed and flash. lt.	43 53.5 69 22.2	North end of island, W. side of entrance to St. George's River. Flash every $\frac{1}{4}$ min. ...	4d	54	12	1855
PENMAQUID POINT One fixed bright light	43 50.2 69 30.	White tower, 32 ft. high, at S.W. entrance to Bristol Bay. Shown from N.E. $\frac{1}{2}$ N. to N. by the E. and South	4a	75	14	1857.

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Burnt Island One fixed bright light	43 49.5 69 38.1	West side of entrance to Townsend Harbour. Shown from N. by E. to S.S.W.	4a	61	13	1821 1858
Hendrick's Head One rev. br. lt., $\frac{1}{2}$ min.	43 49.3 69 41.1	White tower, 30 feet high, on East side of Sheepscott River. Guide to Wiscasset. Shown from S. by E. $\frac{1}{2}$ E. to N. by E. $\frac{1}{2}$ E.	4b	40	12	1829 1851
Pond Island One fixed bright light	43 44.4 69 45.9	On W. entrance of Kennebec River. Shown from N.W. $\frac{1}{2}$ W. to S.W. by W. $\frac{1}{2}$ W. Fog- bell	5a	64	13	1855
SEGUIN ISLAND One fixed bright light	43 42.4 69 45.2	Grey tower, 35 ft. high, on island off entrance to Kennebec River. Fog-whistle	1a	180	20	1857
PORTLAND, or CASCO BAY						
HALFWAY ROCK One fixed & flash. lt.	43 39.3 70 1.8	Grey tower, 66 ft. high, on the rock off N.E. entrance to Casco Bay. Bright fixed light, with red flash every minute. Fog-bell	3c	75	15	1871
CAPE ELIZABETH One rev. br. lt., 1 m. One fixed bright lt.	43 33.9 70 11.7	Eastern tower, 53 ft. high, red bands (fix. lt.) W. tower, 53 ft. high (revol. lt.), one red stripe; 300 yds. apart. Shown from N. to S.S.W. $\frac{1}{2}$ W. Steam fog-trumpet, 2 blasts of 5 secs. in quick succession every minute ...	2b ..	143 143	18 ..	1828 1858
PORTLAND HARBOUR One fixed bright lt.	43 37.4 70 12.1	White tower, 69 ft. high, on the head, S. side, near entrance. Fog-trumpet.....	2a	81	14	1790 1855
Portland Breakwater One red fl. lt. 15 secs.	43 39.3 70 13.8	On N.E. end. Shown from S.W. $\frac{1}{2}$ W. to S.S.E. $\frac{1}{2}$ E.	6a	23	8	1855
Wood Island One rev. red lt., 1 min.	43 27.4 70 19.4	White tower, 47 ft. high, near Saco Harbour. Guide to Winter Harbour Fog-bell	4b	62	13	1858
Goat Island One fixed bright light	43 21.4 70 25.2	White tower, 25 ft. high, on N. side of mouth of Cape Porpoise Harbour. Shown from N.W. $\frac{1}{2}$ W. to N. by the South and East.....	5a	38	11	1833 1857
BOON ISLAND One fixed bright light	43 7.3 70 23.2	Grey tower, 123 ft. high, on W. part; off York Harbour	2a	133	17	1812 1854
NEW HAMPSHIRE.						
Whale's Back One fixed and flash. lt.	43 3.5 70 41.5	White tower, 40 ft. high, on N.E. side of outer entrance to Portsmouth Harbour. Flash every $1\frac{1}{2}$ min. Fog-trum. 8 secs. ev $\frac{1}{2}$ min..	4d	58	12	1829 1855
Portsmouth One fixed bright light	43 4.2 70 42.2	White tower, 60 ft. high, on S.W. side of inner entrance of harbour. Shown from W.N.W. to S.W.	4a	70	14	1804 1854
ISLE OF SHOALS One revolving lt., $\frac{1}{2}$ min.	42 58. 70 38.2	White tower, 40 ft. high, on White Island, S.W. island of Isle of Shoals. Flashes red and bright alternately	2b	87	15	1821 1858
MASSACHUSETTS.						
Newbury Port 1. Two fixed bright lts. 2. Two fixed red lights	42 48.5 70 48.7	1. Upper lt., a white tower, 38 ft. high, on S. side of entrance to port. Shown from N.E. by N. to S.S.E. Lower shifting beacon lt., 500 ft. in front	5a	54 25 37	13 8 ..	1809 1869 1873
Ipswich Harbour One fixed & flashing lt. One fixed bright light	42 41.1 70 45.6	2. Leading lts. after entering; in one W. $\frac{1}{2}$ S. 116 yds. apart				
		White tower, 30 feet high, on South side of entrance. Fix. lt. with flash every $1\frac{1}{2}$ min. Beacon lt., fixed, 500 ft. in front; frequently shifted. In one, about W. $\frac{1}{2}$ N., lead in.....	4d 6a	46 20	12 8	1837 1856

Name and Character of Light.	Lat. N. Long. W. •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Annisquam Harbour One fixed bright light	42 39.7 70 40.6	White tower, 34 ft. high, on Wigwain Point, E. side of entrance. Shown from N.W. by W. to N.E. $\frac{1}{2}$ E.	5a	50	12	1801 1857
Straitsmouth Harbour One fixed bright light	42 39.7 70 34.9	On island, N. of Cape Ann. A local light for Rockport and channel inside the Salvages. Shown eastward, from W. $\frac{1}{2}$ S. to S.S.W. ...	6a	33	10	1850
CAPE ANN Two fixed bright lights	42 38.3 70 34.2	Two stone towers, 112 feet high each, on Thatcher's Island, N. by E. $\frac{1}{2}$ E., and S. by W. $\frac{1}{2}$ W., 296 yds. apart Shown from N. by W. to S.W. by W. A fog-whistle twice every minute	1a 1a	165 165	20 20	1861 1861
Gloucester Harbour One fixed <i>red</i> light	42 34.6 70 39.5	White tower, 33 ft. high, on the Eastern Head. Shown from E. $\frac{1}{2}$ N. to N.N.E. $\frac{1}{2}$ E. Fog- bell	4a	60	13	1837 1857
Ten Pound Island One fixed bright lt.	42 36.1 70 39.6	White tower, 33 feet high, on island in Gloucester, or Cape Ann Harbour	6a	49	12	1821 1850
SALEM						
Baker's Island Two fixed bright lts.	42 32.2 70 46.8	Two white towers, 52 and 39 ft. high, on S. side of N.E. entrance to Salem Harbour, 13 yds. apart. In one, N.W., clears S.E. breaker. Fog-bell	4a ..	87 64	15 13	1797 1857
Hospital Point One bright fixed lt.	.....	On N. side of Salem Harbour. Dangers lie to S. and W. of this, in line with the high lt. on Baker's Island. The lt. is brightest in the fairway channel	3a	35	10	1871
Winter Island One bright fixed lt.	.....	Red iron tower near Fort Pickering	5a	25	8	1871
Derby Wharf	.....	Red light on the end of the wharf	5a	15	5	1871
Marblehead Harbour One fixed bright light	42 30.3 70 49.7	White tower, 23 ft. high, on S. side of entrance. Shown from S.W. $\frac{1}{2}$ W. by the North, to S. by W. $\frac{1}{2}$ W.	6a	43	12	1835 1856
Egg Rock One fixed <i>red</i> light	42 26. 70 53.5	On a house to E.N.E. of Nahant. Shown from S.W. by W. to N. by E. $\frac{1}{2}$ E.	5a	87	8	1856
BOSTON BAY						
OUTER MINOTS LEDGE One fixed bright lt.	42 16.1 70 45.5	Grey granite tower, 100 ft. high, on one of the Cohasset Rocks. Fog-bell	2a	92	14	1860
BOSTON One rev. br. lt., $\frac{1}{2}$ m.	42 19.6 70 53.4	White tower, 80 feet high, on Little Brewster Island, North entrance of harbour. Fog- trumpet 7 secs. in every 50 secs.	2b	111	17	1784 1859
Narrows One fixed <i>red</i> light	42 19.3 70 55.2	Pile lt.-ho., on W. end of Spit from Brewster Island. In one with Long Island Head lt., clears Harding's Ledge	5a	46	12	1856
Long Island Head One fixed bright lt.	42 19.8 70 57.4	White tower, 27 ft high, on N.E. end of island	4a	80	15	1819 1855
Plymouth Two fixed bright lights	42 0.2 70 35.7	Two white towers, 34 ft. high, on Gurnet Point, N. side of harbour. In one, N.W., 10 yds. apart. Shown from N. by W. $\frac{1}{2}$ W. to W. by S. $\frac{1}{2}$ S.	6a	102	15	1769 1856
Duxbury One bright fixed lt.	42 2. 70 40.	White tower, 31 ft. high, on Pier. Fog-bell near	4a	47	10	1816 1871

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CAPE COD BAY						
Race Point	42 3.7	Red iron tower, on N.W. point of Cape Cod.	4d	35	11	1816
One fixed & flash. lt.	70 14.3	Flash every 1½ minutes. Daboll trumpet in fog every min., 2 blasts.				1855
Long Point	42 1.9	On shoal, S.W. entr. to Provincetown Harb.	5a	37	11	1826
One fixed bright lt.	70 9.8	Shown from S.W. by W. ¼ W. to N.N.E. ¾ E. Fog-bell				1856
Provincetown Harbour	42 1.	Dark-brown brick tower, 41 ft. high, at Wood	5b	41	11	1872
One flash. red lt. 15 s.	70 11.	End, near entrance				
Mayo's Beach	41 55.8	Head of Wellfleet Bay. Shown from S. ¼ W.	6a	36	10	1838
One fixed bright lt.	70 1.7	to S.W. ¼ W.				1856
Billingsgate Island	41 52.3	Red tower, 34 ft. high, on N. side of entrance	4a	52	12	1822
One fixed bright lt.	70 3.8	to Wellfleet				1858
Sandy Neck	41 43.3	White tower, 44 feet high, on West side of	4a	59	11	1836
One fixed bright lt.	70 17.1	entrance to Barnstable. Shown from N.W. by W. to W. by S. ¼ S.				1857
CAPE COD HIGHLANDS	42 2.3	White tower, 55 ft. high, on Cape Truro, East	1a	195	20	1797
One fixed bright light	70 3.3	side of Cape Cod. Shown from N.W. ¼ W. to S. by E. ¼ E. Steam fog-whistle, every ½ m.				1857
Nauset Beach	41 51.6	Three white buildings at Eastham, E. side of	6a	93	10	1837
Three fixed bright lts.	69 56.7	Cape Cod. N. and S., 50 yds. apart. Shown from N. ¼ W. to S.				1856
Chatham Harbour	41 40.3	White towers, 46 ft. high each, on W. side.	4a	70	14	1808
Two fixed bright lights	69 56.6	N. and S., 33 yards apart. Shown from N. by E. ¾ E. to S.S.W. ¼ W.				1857
Monomoy Point	41 33.5	Red iron tower, 30 ft. high, on Cape Malabar,	4a	38	10	1823
One fixed bright light	69 59.3	S. end of Cape Cod. Shown from N.E. by N. to N. by E. ¼ E.				1857
Follock Rip Lightvessel	41 32.1	Painted red; off Chatham, 4 miles E. ¼ S. from	●	45	12	1849
One fixed bright light	69 54.8	Monomoy lt. Fog-whistle, 2 blasts of 5 and 3 secs. in each minute				
Shovelful Lightvessel	41 34.	Painted green, 2½ miles S.S.W. ¼ W. from	●	40	11	1852
One fixed red light	69 59.2	Monomoy Point. Fog-bell, horn, and gun				
Handkerchief Lt.-Vessel	41 39.6	Schooner-rigged, straw colour. In 5½ fathoms,	●	40	10	1855
One fixed bright light	70 3.3	½ mile from S. part of shoal. Fog-bell, horn, and gun				
Bass River	41 39.1	North side of Vineyard Sound. Shown from	5a	40	8	1854
One fixed bright light	70 9.9	E. by S. ¼ S. to W. by N.				
Bishop and Clerks	41 34.4	Grey tower, 47 ft. high, on N. part of shoal.	4b	59	13	1858
One rev. br. lt., ½ min.	70 14.7	Fog-bell				
Succunnesset Shoal Lt.-V.	41 32.	Schooner-rigged, with red and white squares.	●	40	10	1854
One fixed bright light	70 26.7	In 6 fathoms. Between Succunnesset and Eldridge Shoals. Fog-bell, horn, and gun				
NANTUCKET	41 23.4	White tower, 60 ft. high, on N.E. point of	3a	70	14	1784
One fixed bright light	70 2.4	Island. Shown from S.S.E. to S.E. by S. ...				1857
SANKATY HEAD	41 17.	Tower, 65 ft. high, white, red, white, on S.E.	2d	150	20	1849
One fixed and flash. lt.	69 57.6	part of Nantucket Island. Flash of 10 secs. every minute. Shown from N. by W. ¼ W. to S. by W. ¼ W.				
South Shoal Lightvessel	40 56.	Schooner-rigged, red. In 14 fathoms. Two	●	44	12	1858
Two fixed bright lights	69 51.5	miles S. of shoal. Fog-bell, horn, and gun				

Name and Character of Light.	Lat. N. Long. W. o /	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
VINEYARD SOUND						
Hyannis Harbour One fixed <i>red</i> lt.	41 38. 70 17.	White building, inside the breakwater. Shown from S. by E. $\frac{1}{2}$ E. to W.S.W. $\frac{1}{2}$ W.....	●	42	10	1849
Cross Rip Lt.-Vessel One fixed bright lt.	41 26.7 70 17.1	Black, with white streak. In 8 fathoms; N.W. of Nantucket. Fog-bell, horn, and gun.....	●	39	10	1828 1864
Nantucket Cliff Two fixed bright lts.	.....	On the beach, N.W. of harbour, N.W. and S.E. 100 yards apart .....	..	8 10	4 ..	1838 1856
Nantucket Beacon One fixed bright lt.	.....	From a window on the rising ground, 1 mile behind Brant Point light.....	..	10	5	1861
Brant Point One bright fixed lt.	41 17.3 70 5.2	A red tower, 43 ft. high, on West point of entrance to Nantucket Harbour. In one with the beacon light it clears Black Flat to starboard	4a	46	13	1759
Cape Poge One fixed bright lt.	41 25.2 70 26.7	White tower, 36 feet high, on N.E. point of Martha's Vineyard Island. Shown from W. $\frac{1}{2}$ S. to S.E.	4a	57	13	1801 1857
Edgartown One fixed bright lt.	41 23.4 70 29.8	On N.W. side of entrance to harbour. Shown from N. $\frac{1}{2}$ W. to W. $\frac{1}{2}$ S.	4a	37	12	1828 1856
Holmes Hole 1. One fix. bright lt. 2. One fixed <i>red</i> lt.	41 28.9 70 36.	1. White tower, 33 ft. high, on W. Chop of harbour. Shown from W. by N. $\frac{1}{2}$ N. to S. $\frac{1}{2}$ E. 2. White iron lt.-ho. on E. Chop, E. entr. pt. of harbour. Lt. shown betw. S.E. by E. & W. by N. $\frac{1}{2}$ N.....	4a ●	69 77	13 14	1817 1876
Nobsque Point One fixed bright lt.	41 30.9 70 39.	White house, E.S.E. of entrance to Wood's Hole Harbour. Shown from N.E. by E. to W. by N. $\frac{1}{2}$ N. Fog-bell	5a	80	15	1828 1856
Tarpaulin Cove One flashing br. lt.	41 28.1 70 45.1	White tower, 32 ft. high, on West side, on Naushen Island. Flashes every $\frac{1}{2}$ minute. Shown from N.E. by E. $\frac{1}{2}$ E. to S.W.	5c	80	13	1817 1870
Vineyard Sound Lt.-V. Two fixed bright lts.	41 22. 70 58.7	Painted red, with yellow streak. In 13 $\frac{1}{2}$ fms., near Sow and Pigs Rocks. Two red balls. Steam fog-whistle ev. $\frac{1}{2}$ min.....	● ..	34 23	9 ..	1847 1855
Hen & Chickens Lt.-V. One bright fixed lt.	41 27. 71 0.8	Gooseberry Point. Painted lead-colour; in 10 fms., $\frac{1}{2}$ a mile S.E. of reef. Fog-bell. Horn. Whistle-buoy in 7 $\frac{1}{2}$ fms., 1 m. S.W. of lt.-ves.	●	40	10	1864
Sow AND Pigs <i>Building</i>	.....	Building on the rocks .....	..	..	..	....
GAYHEAD One flashing red and bright light	41 20.9 70 49.8	Red tower, 41 ft. high, on W. pt. of Martha's Vineyard Island. Flash ev. 10 secs., every fourth flash being red. A rocky shoal to N.W., $\frac{1}{2}$ mile. Shown from E. $\frac{1}{2}$ N. to S.S.E.	1b	170	20	1858
BUZZARD'S BAY						
Cuttyhunk One fixed bright lt.	41 24.8 70 56.6	White tower. 32 feet high, on S.W. point of island. Shown from S. to N.E. $\frac{1}{2}$ N.	5a	42	12	1823 1857
Dumpling Rock One fixed bright lt.	41 32.3 70 54.9	White tower, 33 ft. high, off Round Hill. Shown from N. by W. $\frac{1}{2}$ W. to S.W. by W. Fog-bell	5a	42	12	1828 1857
NEW BEDFORD One bright fixed lt.	41 35.7 70 53.8	On N.W. angle of Fort, Clark's Point, W. side of entrance. Shown from N. by E. $\frac{1}{2}$ E. to W. by N. $\frac{1}{2}$ N. Fog-bell.....	5a	68	13	1800 1869

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BUZZARD'S BAY—(continued).						
Palmer's Island One fixed bright lt.	41 37.6 70 54.2	On N.E. end, in New Bedford Harbour. Shown from S.E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ E.	5a	32	9	1849 1856
Wed's Point One fixed bright lt.	41 39. 70 47.4	White tower, 32 ft. high, on N. side of Mattapoisett Harbour. Shown from S.E. $\frac{1}{2}$ E. to S. by W. $\frac{1}{2}$ W.	6a	43	11	1849 1856
Bird Island One rev. br. lt., 1 $\frac{1}{2}$ m.	41 40.1 70 42.7	East side of entrance to Sippican Harbour. Shown from N. by E. $\frac{1}{2}$ E. to N.N.W. $\frac{1}{2}$ W.	5b	35	10	1819 1857
Wing's Neck One fixed bright lt.	41 40.8 70 39.3	Head of Buzzard's Bay, in Sandwich. Shown from S. $\frac{1}{2}$ W. to N.E. $\frac{1}{2}$ N.	5a	44	10	1849 1856
RHODE ISLAND.						
Brenton's Reef Lt.-Ves. Two fixed bright lights	41 25. 71 21.5	Painted straw colour. In 13 fathoms, E. side of entrance to Newport. Fog-bell and horn	e	50 40	12	1850
BEAVER TAIL One fixed bright light	41 26.9 71 23.6	Square granite tower, 74 ft. high, on S. point of Conanicut Island, entrance to Newport Harbour. Shown from N. $\frac{1}{2}$ E. to N.E. $\frac{1}{2}$ N. Fog-trumpet 2 blasts ev. 1 $\frac{1}{2}$ m.	3a	96	16	1793 1856
Lime Rock One fixed bright light	41 28.6 71 19.2	On the rock, S. side of Newport Harbour	6a	30	9	1854
NARRAGANSETT BAY						
Newport Harbour One fixed bright lt.	41 29.6 71 19.3	On North end of Goat Island. Fog-bell	4a	33	11	1823 1857
Rose Island One red fixed light	.....	On S.E. point of the island	6a	..	6	1869
Dutch Island One fixed bright lt.	41 29.8 71 23.9	White tower, 35 ft. high, on S. end of island. Fog-bell every 15 secs.	4a	56	14	1826 1857
Wickford One fixed bright lt.	41 34.2 71 26.	White tower, 33 ft. high, on Poplar Point. Shown from N.E. by E. $\frac{1}{2}$ E. to S. $\frac{1}{2}$ E.	5a	51	12	1831 1855
Prudence Island One fixed bright lt.	41 36.3 71 17.9	White tower on East side, on Sandy Point. Shown from N. by E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ S.	5a	30	10	1852
Bristol Ferry 1. One fixed br. lt. 2. One fixed red lt.	41 38.5 71 15.2	1. On N. side of entrance to Mount Hope Bay. Shown from N.E. to E. by S. 2. On beacon on Mussel Shoal, S.E. side of channel. Fog-bell 20 secs.	6a 6a	35 27	10 9	1855 1873
Warwick One fixed bright lt.	41 40. 71 22.4	On S. end of neck. Shown from N.E. by N. to N.W. by W. $\frac{1}{2}$ W.	4a	54	14	1826 1856
Providence River One fixed bright lt.	41 42.5 71 21.	Granite tower, 50 ft. high, on end of spit of Conanicut Point, West side of entrance of river. Shown from N. by E. $\frac{1}{2}$ E. to S.W. $\frac{1}{2}$ W. Fog-bell. Above this, five fixed lts. are shown in Providence River	4a	50	11	1868
POINT JUDITH One rev. lt., 15 secs.	41 21.6 71 28.6	White tower, 45 ft. high, on S. extremity of Narragansett shore. Shown from W. $\frac{1}{2}$ S. to N.E. by N. Fog-trumpet	4a	67	14	1810 1857
BLOCK ISLAND 1. One fixed bright lt. 2. One fixed bright lt.	41 13.8 71 34.3	1. Gray granite tower, 50 ft. high, on N. pt. of Id. Shown northwards, from S.S.W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S. 2. On S.E. end of Id. Brick tower, 67 ft. high. Fog-trumpet	4a 1a	75 200	12 21	1829 1869 1875

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
WATCH HILL One fixed bright light	41 18.2 71 51.8	Granite tower, 40 ft. high, on Watch Point, 3 miles S.E. of Stonington. Shown southwards, from W. $\frac{3}{4}$ N. to E. $\frac{3}{4}$ N.....	4a	62	14	1808 1857
CONNECTICUT AND NEW YORK.						
BLOCK AND LONG ISLAND SOUNDS						
Stonington One fixed bright lt.	41 19.6 71 54	White tower, 30 feet high, on East side of entrance. Shown from W. $\frac{1}{4}$ N. to E. by N. $\frac{1}{4}$ N.	6a	50	12	1823 1856
Eel Grass Lightvessel One fixed bright lt.	41 18.4 71 56.7	On the shoal, painted lead colour. Fog-bell and horn	•	32	10	1835 1857
Morgan's Point One fixed bright lt.	41 18.9 71 59.1	Granite tower, 34 ft. high, on North side of Fisher's Island Sound. Shown from S.W. by W. $\frac{1}{4}$ W. to E. $\frac{1}{4}$ N.	6a	44	11	1831 1856
North Damppling Id. One fixed <i>red</i> light	41 16. 72 3.	In Fisher's Island Sound. Fog-bell	6a	70	12	1855 1868
NEW LONDON One fixed bright lt.	41 19.1 72 5.	White tower, 33 ft. high, on West side of entrance to River Thames. Shown eastward from S. $\frac{3}{4}$ W. to N. $\frac{1}{4}$ E. Fog-trumpet every 20 seconds.....	4a	85	14	1800 1857
Bartlet's Reef Lt.-Ves. Two fixed bright lts.	41 16. 72 7.5	On reef, off New London. Painted black with white streak. Fog-bell and horn.....	• ..	28 35	10 ..	1846 1857
LITTLE GULL ISLAND One bright fixed lt.	41 12.3 72 6.7	Granite tower, 74 ft. high, on S. side of main entrance between Block and Long Island Sounds. Shown all round. Steam fog-trumpet every $\frac{1}{4}$ minute	2a	92	16	1806 1870
RACE ROCK Rev. <i>red</i> and br. lt. every 30 secs.	41 14.6 72 2.8	Lt.-ho., surmounted by black lantern, on W. exir. of Fisher Id., N. side of entr. to Long Island Sound. Fog-bell, 2 blows once in ev. 20 secs.	c	66	14	1878
Gardiner's Island One fixed bright lt.	41 8.3 72 8.2	On N. point. Shown northward from S. $\frac{1}{4}$ W. to S.E. $\frac{1}{4}$ S.	6a	29	6	1855
Plum Island One rev. br. lt., $\frac{1}{4}$ m.	41 10.4 72 13.6	Grey tower, 34 ft. high, on W. end; N.E. extremity of Long Island. Guide through Plum Gut. Fog-bell $\frac{1}{4}$ minute	4a	63	12	1827 1856
Long Beach Bar One fixed <i>red</i> light	41 6.3 72 17.8	Pile lighthouse in 5 ft. water, at entrance to Orient & Greenport Harbours, Long Island. Fog-bell every $\frac{1}{4}$ minute	5a	56	13	1871
Cedar Island One fixed bright lt.	41 2.4 72 15.3	White tower, 31 ft. high, at entrance to Sag Harbour, Long Island	6a	34	10	1839 1856
Saybrook Point One fixed bright lt.	41 16.3 72 20.3	White tower, 70 ft. high, on Lynde Point, W. side of Mouth of Connecticut River. Shown southward from W. by S. $\frac{1}{4}$ S. to E. Bell ...	4a	80	13	1803 1857
Calves' Island One fixed bright lt.	41 19.5 72 21.	Two miles below Essex Town, East side of river	6a	..	3	1856
Brockways Reach	| ..... |	Fixed bright lt., 2 miles above Essex Town ...	6a	..	3	1856
Devil's Wharf	| ..... |	Fixed bright lt., 4 miles above Essex Town ...	6a	..	3	1856

Name and Character of Light.	Lat. N. Long. W. • •	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
LONG ISLAND SOUND—(continued).						
Cornfield Point Lt.-Ves. One fixed red lt.	41 13.5 72 22.8	Red; sloop-rigged. In 7½ fathoms, on middle of S. side of Long Sand Shoal. Fog-bell and horn	•	40	10	1856
HORTON'S POINT One fixed bright lt.	41 5.1 72 26.4	Red tower, 30 ft. high, on the point. Shown northward from S. by W. ½ W. to N. by E. ½ E.	3a	110	18	1867
FAULKNER'S ISLAND One fixed and flash lt.	41 12.7 72 38.9	White tower, 44 ft. high, on island off Guilford Harbour. Flash every 1½ min. Shown all around. Fog-bell	4d	98	15	1801 1856
NEW HAVEN HARB. One fixed bright light	41 14. 72 54.8	From one-storied dwelling on S.W. Ledge, at entrance of harbour. Fog Bell ev. 15 secs.	..	56	13	1876
Newhaven One fixed red light	41 17.5 72 55.	On end of Long Wharf.	6a	21	8	1861
STRATFORD SHOALS Rev. br. lt., 15 secs.	41 3.5 73 5.7	From granite lt.-ho. on Middle Ground. Fog-bell, 3 blows once every 30 seconds	c	55	13	1877 1878
Stratford River One rev. br. lt. 1½ m.	41 9.1 73 6.2	Tower, striped black and white, on W. entr. pt. of river. Fog-bell, 4 strokes at intervals of 10 secs., followed by silence of 30 secs. ...	3b	53	12	1821
Bridgeport One fixed red light	41 9.4 73 10.5	White and red tower on the shoal, W. side of entrance to river. Shown all round. Fog-bell, ev. 15 secs.	6a	60	10	1871
Penfield Reef One red flash. lt. 5 s.	41 7.1 73 12.8	A white tower on the reef, near the S.W. entrance point of Black Rock and Bridgeport Harbours. Fog-bell, 2 bl. ev. 20 secs.	4b	46	13	1874
Old Field Point One fixed bright lt.	40 58.6 73 6.8	White tower, 34 feet high, on South side of Long Island Sound. Shown northward from W. by S. ½ S. to E. by S.	4a	67	13	1823 1856
Black Rock Harbour One fixed bright lt.	41 8.5 73 12.7	White tower, 35 ft. high, on Fairweather Island. Shown northward from S.W. by W. ½ W. to E.	5a	52	12	1808 1854
EATON'S NECK One fixed bright lt.	40 57.2 73 23.4	White tower, 60 feet high, on East side of entrance to Huntington Bay. Shown northward from W. to S.E. by E. ½ E. In fog, a siren (or steam fog-horn) every ½ min.	3a	142	17	1798 1857
Lloyd's Harbour One fixed bright lt.	40 54.9 73 25.7	White tower, 34 ft. high, on S.E. point of Lloyd's Neck, N. side of entrance	5a	48	10	1857
Norwalk Island One fixed & flash. lt.	41 2.9 73 24.9	White granite tower, 34 ft. high. Bright lt., with red flash every 70 seconds. At West entrance of Norwalk River. Guide to N. shore of Long Island Sound, and to river. Shown southward from W. by S. ½ S. to E. by S. ½ S. A rocky ledge half a mile to S.S.W.	4b	40	11	1826 1857
Great Captain Island One fixed bright lt.	40 58.9 73 37.1	White granite tower, 34 feet high, near Greenwich Point. Shown all round	4a	62	12	1829 1858
Execution Rocks One fixed bright lt.	40 52.6 73 43.9	White tower, 42 ft. high, on rock off Sands Point. Steam fog-trumpet	4a	54	12	1848 1856

Name and Character of Light.	Lat. N. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
LONG ISLAND SOUND—(continued)						
SANDS POINT	40 51.9	White tower, 41 ft. high, on East side of	4b	53	15	1809
One rev. br. lt., $\frac{1}{2}$ m.	73 43.5	entrance to Cow Bay, Long Island. Shown northward from S.W. $\frac{1}{2}$ S. to E. by N. $\frac{1}{2}$ N.				1856
Stepping Stones	40 49.4	From dwelling on W. Stepping Stone Rock, E.	..	47	10	1877
One fixed red light	73 46.2	River, entr. to Long Island Sound. Fog-bell, 2 strokes ev. 20 secs.				
Throgg's Neck	40 48.3	White tower, 61 ft. high, on S.E. point of	6a	66	10	1828
One fixed bright lt.	73 47.1	Neck, at N.W. entrance to E. River. Shown southward from W. to N.N.E. $\frac{1}{2}$ E. Bell ...				1855
North Brother	40 48.	On S. part of island, in the East River, between	6a	50	10	1809
One bright fixed lt.	73 51.	Long Island Sound and New York				
Blackwell Island	40 46.2	Gray tower, 40 ft. high	4a	54	13	1872
One fixed red light	73 56.1					
NEW YORK AND NEW JERSEY.						
MONTAUK POINT	41 4.2	White tower, 97 feet high, at E. end of Long	1d	160	20	1795
One fixed and flash. lt.	71 51.1	Island. A brighter flash every 2 minutes. Shown eastward from N.W. by W. $\frac{1}{2}$ W. to S.W. Fog-trumpet once every minute				1860
GREAT WEST, or SHIN- NECOCK BAY	40 50.9	Red brick tower, 150 ft. high, on Pondquogue	1a	160	20	1857
One fixed bright light	72 29.9	Point, N. side of Shinnecock Bay, $\frac{1}{2}$ mile inland from S. coast of Long Island. Shown southward from W. by S. $\frac{1}{2}$ S. to N.N.E. $\frac{1}{2}$ E.				
FIRE ISLAND	40 37.9	Yellow tower, 150 ft. high, on E. side of	1b	166	22	1826
One rev. br. lt., 1 min.	73 12.8	inlet, S. side of Long Island. Shown south- ward from W. $\frac{1}{2}$ S. to E. $\frac{1}{2}$ N.				1858
NEW YORK BAY						
SANDY HOOK LT.-V.	40 26.9	Painted red, in 14 fms., $\frac{6}{16}$ miles from Sandy	•	45	10	1823
Two fixed red lights	73 52.	Hook and Navesink Its. Fog-bell				1854
"Scotland" Wreck Lightvessel	.....	Moored in 7 fms. at entr. to New York Bay, N.E. $\frac{1}{2}$ N. from Highlands of Navesink Its. Fog-bell .....	..	..	..	....
HIGHLANDS OF NAVESINK	40 23.7	Gray granite towers, 58 ft. high each, South	1a	248	22	1828
Two fixed bright lts.	73 58.8	side of Sandy Hook, 100 yds. apart. Shown eastward from N.W. to S. by E.	1a	248	22	1862
SANDY HOOK	40 27.6	S. entrance to New York Harbour. East lt.	3a	90	15	1762
Three fixed bright lts.	73 59.8	is on N. point of Sandy Hook, N. by W., $\frac{1}{2}$ of a mile, and West light N.W., $\frac{1}{2}$ of a mile from main light. A steam fog-whistle every $\frac{1}{2}$ of a minute	4a 6a	35 35	9 10	1868
Main Channel	40 25.2	Lower lt. on Canover Beacon, South shore of	3a	60	12	1856
Two fixed bright lts.	74 4.	Sandy Hook Bay. Upper light on Chapel Hill, $\frac{1}{2}$ mile to S. by W.	2a	224		
Gedney's Channel	40 26.9	Leading lights near Point Comfort, $\frac{1}{2}$ of a mile	2a	40	12	1856
Two fixed bright lts.	74 7.9	apart, in one bearing W. by S.	3a	76	14	
Swash Channel	40 33.7	Range lts. on Staten Island, near Elm Tree	2a	59	14	1856
Two bright fixed lts.	74 6.9	Station and New Dorp, $\frac{1}{2}$ mile apart; in line, bearing N.W.	3a	189		
Princes Bay	40 30.4	Grey tower, 33 ft. high, near S.E. end of	3d	106	16	1828
One fixed & flash. lt.	74 12.5	Staten Island. Flash every 3 minutes. Guide to Amboy and Raritan River. Shown from E. by N. $\frac{1}{2}$ N. to S.W. $\frac{1}{2}$ W.				1857
Fort Tompkins	40 36.	White tower, 46 ft. high, on Staten Island,	4a	89	15	1839
One fixed bright lt.	74 2.9	W. side of Narrows. Shown eastward from N. $\frac{1}{2}$ W. to S.W. $\frac{1}{2}$ S. Fog-bell at Fort La- fayette, 1 blow and 2 blows alternately every 20 secs.				1855
Robbins Reef	40 39.4	White stone tower, 51 ft. high, off Tompkins-	4a	66	13	1839
One fixed bright lt.	74 3.6	ville, N.W. part of New York Harbour. Fog-bell every 15 secs.				1855
Governor Island	40 41.5	N.W. end. Fog-bell twice every 20 secs. ....	..	..	..	....
	74 1.2					

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
NEWARK BAY						
Bergen Point One fixed bright lt.	40 38.5 74 8.6	On a reef, at entrance to Newark Bay. Fog-bell	6a	40	10	1846 1853
Corner Stake One fixed red lt.	40 38.7 74 9.8	Opposite Elizabeth Port	6a	..	..	1857
Passaic River One fixed bright lt.	40 41.7 74 7.3	At mouth of river. Fog-bell	6a	40	10	1849
Elbow Beacon One fixed bright lt.	40 42.1 74 7.1	On shoal point, $\frac{1}{2}$ mile N. of Passaic light ...	6a	..	..	1854
NEW JERSEY.						
BARNEGAT One rev. br. lt., 10 secs.	39 45.8 74 6.1	Red and white tower, 159 ft. high, on N. end of Long Beach, S. side of inlet. Shown all round	1b	165	22	1831 1858
TUCKER'S BEACH One fixed and flash. lt.	39 30.3 74 16.8	Grey tower, 44 ft. high, at $\frac{1}{2}$ of a mile northward of the entrance to Little Egg Harbour. Shown eastward from N. by W. $\frac{1}{2}$ W. to N.W. by W. $\frac{1}{2}$ W. Flash every minute.....	4d	..	12	1867
ABSECON One fixed bright light	39 22. 74 25 6	Tower, 150 ft. high, painted red & wh. bands, on S. side of inlet. Shown from N.E. by N. to S.W. Whistle-buoy in 8 fms., $6\frac{1}{2}$ miles E. from lighthouse	1a	167	22	1865
Hereford Inlet One fixed red light	39 0. 74 48.	Straw coloured building surrounded by trees	4a	51	13	1874
CAPE MAY, or FIVE-FATHOM BANK LT.-V. Two fixed bright lts.	38 48.3 74 36.2	Painted straw colour. In 9 fms. E. 23 miles from Cape Henlopen lt., and S.E. of Five-Fathom Bank. Fog-whistle, 4 secs. in every minute. Pass S. and E. of lightvessel.....	● ..	45 40	10 ..	1839 1878
CAPE MAY One br. rev. lt., $\frac{1}{2}$ min.	38 55.8 74 57.3	Grey tower, 145 ft. high, on N. side of entrance to Delaware Bay. Shown all round	1b	152	19	1823 1859
CAPE HENLOPEN One fixed bright light	38 46.6 75 4.7	White tower, 82 ft. high, on S. side of entr. to Delaware Bay. Shown from N.W. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E. Fog-siren, 6 secs. in every $\frac{1}{2}$ min.....	1a 4a	180 33	20 10	1792 1855
Beacon Light One fixed light	.....	A white screw pile lt.-ho., 1 mile N.W. of main light. Shown from N.W. $\frac{1}{2}$ W. to S. $\frac{1}{2}$ E.....	4a	45	11	1864
DELAWARE BAY AND RIVER						
Breakwater One fixed & flash. lt.	38 47 9 75 6.1	White tower, 45 ft. high. Flash every 45 secs. Fog Bell every 10 secs.....	4d	47	10	1849 1855
Brandywine Shoal One fixed bright lt.	38 59.1 75 6.5	Red iron screw pile tower. Fog Bell	3a	46	13	1850 1857
Fourteen-foot Bank Lightvessel Two fixed br. lts.	39 3. 75 11.	Lt.-ves. painted yellow, in 4 $\frac{1}{2}$ fms., $2\frac{1}{2}$ cables E. of bank, 5 miles N.N.W. $\frac{1}{2}$ W. from Brandywine lt., and $6\frac{1}{2}$ miles S. by E. $\frac{1}{2}$ E. from Cross Ledge lt. Pass eastward of her .....	..	..	10	1876
Maurice River One fixed bright lt.	39 11.6 75 1.8	White tower, 39 ft. high, on S.W. side of Haystack Island. Shown from S.W. by W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S.....	6a	48	11	1849
Mispillion River One bright fixed lt.	38 56.7 75 18.5	Gray tower near the entrance	6a	48	11	1873
Egg Island One fixed bright light	39 10.5 75 8.1	White screw pile lighthouse on N. side of bay. Shown from N.W. $\frac{1}{2}$ N. to E. by S.....	5a	45	11	1837 1856
Mahon River One fixed bright lt.	39 10.5 75 24.3	New tower, painted buff, 660 yds. N. by E. $\frac{1}{2}$ E. from position of old lt.	5a	53	13	1831 1875
Cross Ledge Shoal One fix. & flashing lt. every $\frac{1}{2}$ minute	39 9.5 75 14.5	Iron lt.-ho., $\frac{1}{2}$ mile within S. extr. of shoal, W. by S. $4\frac{1}{2}$ miles from Egg Id. lt., and E. by S. $7\frac{1}{2}$ miles from Mahon lt. Fog-bell...	4c	51	12	1876

Name and Character of Light.	Lat. N. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
DELAWARE BAY AND RIVER—(continued).						
Cohanzey	39 20.3	Lt.-ho., 40 ft., on W. side of creek, E. side of bay. Shown to S. from N.W. $\frac{1}{2}$ W. to S.E. $\frac{1}{2}$ S.	5a	46	11	1838
One fixed bright lt.	75 21.3					1855
Ship John Shoal	39 18.3	Black lt.-house and brown dwelling. Fog-bell 3 strokes once in ev. 45 secs.	●	53	13	1877
One fixed red light	75 22.7					
Bombay Hook	39 21.8	Bright lt. from tower, on N.W. end of island	4a	46	11	1831
Port Penn	39 29.5	From black tower, in trees, and white frame-work, $\frac{1}{2}$ m. apart. In line lead up channel fr. m S.E.-ward	..	133	..	1877
Two fixed bright lts.	75 35.7		..	33	..	....
Finn Point	39 35.6	From black tower, in trees, and white frame-work, $\frac{1}{2}$ m. apart. In line lead up channel from southward	..	98	..	1877
Two fixed bright lts.	75 32.7		..	23	..	....
Newcastle	39 38.	Two fix. br. leading lts., $\frac{1}{2}$ mile apart. To mark channel passing Pea Patch Island	..	..	..	1876
Deep Water Point	39 41.	Two fix. br. leading lts., $\frac{1}{2}$ mile apart. To mark channel at upper part of Bulkhead Shoal ...	..	..	..	1876
Christiana River	39 43.3	Br. fix. lt. at Wilmington, N. side of river ...	4a	48	11	1835
Fort Mifflin	39 52.1	Bright lt. on pier, opposite the fort. Fog Bell	6a	28	7	1849
Schuylkill River	39 53.3	Two fix. br. lts. In line, lead through dredged channel into Schuylkill River	..	..	..	1876
FENWICK ISLAND	38 27.	White brick tower, 82 ft. high; fixed lt., with flash every 2 min. Shown eastward from North to South	3d	86	15	1858
One fixed and flash. lt.	75 4.1					
VIRGINIA.						
Winter Quarter Shoal	37 57.	Painted red, in 11 fathoms, S.E. by E. $\frac{1}{2}$ E., 2 miles from centre of shoal	..	15	11	1874
Lightvessel	75 5.5					
One fixed bright light						
ASSATEAGUE ISLAND	37 54.6	Red brick tower, 129 ft. high, 2 miles from S.W. point of island. Shown eastward from N.N.E. $\frac{1}{2}$ E. to W.S.W. Very dangerous shoals lie from 5 to 11 $\frac{1}{2}$ miles to N.E., E., and S.E.	1a	150	19	1838
One bright fixed light	75 21.1					1867
Hog Island	37 23.3	White tower, 45 ft. high, on W. point of the island. Guide to Great Matchipongs Inlet. Shown eastward from N. by W. $\frac{1}{2}$ W. to W. by S. $\frac{1}{2}$ S.	4a	60	13	1852
One fixed bright light	75 47.6					1855
CHESAPEAKE BAY						
CAPE CHARLES	37 7.1	New circular white tower, 150 ft. high, near N.E. end of Smith Island, North side of entrance to Chesapeake Bay. Flash every 45 secs. Shown all round	1c	150	21	1864
One fixed & flash. lt.	75 53.2					
CAPE HENRY	36 55.5	White tower, 82 ft. high, near sand-hills on S. side of entrance	2a	129	17	1791
One fixed bright lt.	76 0.2					1857
The Thimbles	37 0.	Screw pile lighthouse on the Horseshoe Bank, in 11 ft. Pass to southward. Red flash every 15 secs. Fog-bell every 5 secs.	4c	44	12	1872
One br. fix. lt., red fl.	76 14.					
Old Point Comfort	37 0.	White tower, 40 ft. high, on N. side of entr. to Hampton Roads and James River. Shown from N. $\frac{1}{2}$ W., eastward, to W. $\frac{1}{2}$ S. Fog-bell every 10 secs.	4a	48	11	1802
One fixed bright lt.	76 18.4					
Craney Island Shoal	36 53.5	Piles on W. side of entr. to Elizabeth River. Fog-bell ev. 12 secs. Shown eastward from W. by N. $\frac{1}{2}$ N. to S. by W. $\frac{1}{2}$ W.	5a	40	11	1820
One fixed bright lt.	76 20.3					1854
Lambert Point	36 52.2	Screw pile lt.-ho. off Lambert Point, in 6 ft. water, E. side of channel to Elizabeth River	5a	36	10	1872
One fixed red light	76 20.					
Portsmouth	36 50.8	On wharf of Naval Hospital, from mast 45 ft. high, 60 ft. N. of former light-station	6a	..	6	1857
One fixed red light	76 18.1					1878
Nausemond River	36 54.8	Pile lt.-ho. white with red roof, in 5 $\frac{1}{2}$ ft. water, at river entr. Fog-bell sounded every 7 secs.	6a	33	11	1878
One fixed red light	76 26.5					
James River	37 1.4	(White Shoal.) Screw pile lt.-ho. below Sandy Point. Fog-bell every 10 secs.	6a	27	9	1854
One fixed bright lt.	76 31.5					
Point of Shoals	37 3.8	White screw pile lighthouse on the shoal. Fog-bell.....	6a	27	9	1854
One fixed bright lt.	76 39.2					
Deep Water Shoals	37 8.2	White screw pile lighthouse on the shoal. Fog-bell ev. 15 secs.	6a	27	9	1854
One fixed bright lt.	76 38.					
Jordan's Point	37 18.7	White tower, 35 ft. high, on the port side going up James River. Fog-bell ev. 10 secs.	6a	35	10	1854
One fixed bright lt.	77 13.1					

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CHESAPEAKE BAY—(continued).						
Cherrystone Inlet One fixed bright lt.	37 15.6 76 1.8	White pile lighthouse on W. side of entrance of inlet, E. side of Chesapeake Bay. Fog-bell	4a	36	10	1859
Back River Fix. & fl. br. lt., 1½ m.	37 5.2 76 15.9	White tower, 30 ft. high, on South side of entrance	4b	35	10	1829 1854
York River 1. One fixed red lt. 2. One fix. bright lt.	37 12.3 76 14.7	1. Screw pile lt.-ho., painted yellow, in 12 ft. water, at E. end of York Spit. Fog-bell ... 2. Brown, white, and red pile lt.-ho. at Toos Point Fog-bell	● ..	37 40	11 11	1870 1876
New Point Comfort One fixed bright lt.	37 18. 76 16.4	Stone tower, 56 ft. high, on N. side of entrance to Mobjack Bay	4a	60	13	1804 1855
Wolf Trap Shoals One bright light, with flash every ½ min.	37 23.3 76 10.	Screw pile lighthouse on East side of shoal, between York and Rappahannock Rivers. Fog-bell ev. 15 secs	4a	36	11	1870
Stingray Point One fixed red light	37 33.6 76 15.9	White pile lt.-ho., in 6 ft. water, on S. side of Rappahannock River. Fog-bell at alternate intervals of 5 secs. and 30 secs.	6a	36	7	1859
Windmill Point One fixed bright lt.	37 34.8 76 14.5	Pile lighthouse, straw colour, in 12 ft. water, on S.E. part of shoal, N. side of Rappa- hannock River. Fog-bell every 10 secs.	●	34	10	1834 1854
Watts Island One fixed & flash. lt.	37 46.9 75 53.8	White tower, 40 ft. high, on South end, East entrance to Tangier Sound. Flash every 2 minutes	5c	46	12	1833 1857
MARYLAND.						
Janes Island One bright light	37 57.8 75 54.6	White pile lighthouse, off mouth of Anna- messix River, Tangier Sound. Fog-bell ...	4	35	10	1867
Somers Cove One fixed bright lt.	37 58. 75 52.2	In Tangier Sound. Fog-bell ev. 15 secs.	6a	35	10	1867
Smith Point One fixed & flash. lt.	37 53.6 76 11.4	White pile lighthouse, on S. side of entrance of Potomac. Bright lt., with red flash every 25 secs. Fog-bell	3c	38	11	1869
Solomon Lump One fixed light	38 2.8 76 0.5	White lt. ho. on piles in 6 ft., opposite entr. of Potomac River. Lt. vis. from N.N.W. by the W. to E.N.E. Fog-bell, 2 strokes and 1 stroke alternately every 30 secs.	5a	42	11	1875
Clay Island One fixed bright lt.	38 13.9 75 58.1	N. side of entrance to Nanticoke River	6a	36	10	1832 1855
Lookout Point One fixed bright lt.	38 2.3 76 19.	N. side of entrance to Potomac River. Bell	4a	37	10	1831 1857
Hooper's Strait Lighthouse destroyed	38 12.9 76 4.8	Screw pile lighthouse, in 6 ft. water, on the shoal abreast the Honga River. Fog-bell	5a	..	8	1867
Cove Point One fixed & flash. lt.	38 23.1 76 23.6	White tower, 39 ft. high, 4 miles North of Patuxent River, on W. side of Chesapeake. Flash every 1½ minute. Fog-bell	4d	46	11	1828 1857
Sharp Island One bright fixed lt.	38 37.9 76 22.3	On a screw pile lighthouse, in 7½ ft. water, off N.W. point of island. Lt. shown westward between S. by W. and E. by S.	5a	35	10	1866
Choptank River One bright fixed lt.	38 39.3 76 11.	Screw pile white lt.-ho., in 9 ft. water, 1½ mile S.E. of Benoni Point. Fog-bell ev. 10 secs.	6a	38	10	1871

Name and Character of Light.	Lat. N. Long. W. ° ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CHESAPEAKE BAY—(continued).						
Thomas Point Shoal One rev. red lt. 30 s.	38 54.2 76 25.7	White & brown pile lt.-ho. 1 mile E. by S. $\frac{1}{2}$ S. from position of old lt. Fog-bell.....	●	42	12	1876
Greenbury Point One fixed bright lt.	38 58.3 76 26.9	N. side of Annapolis Harbour, at entrance to Severn River	6a	50	11	1848 1856
Sandy Point One fixed & flash. lt.	39 1.1 76 23.5	Wh. tower, 35 ft. high, on W. side of Chesapeake. Flash every $1\frac{1}{2}$ min. Fog-bell	5d	50	12	1858
Love Point One fixed bright lt.	39 4. 76 16.5	A screw pile lighthouse, in 10 ft. water, at $1\frac{1}{2}$ mile N.E. from Love Point, entrance of Chester River. Fog-bell every 8 secs.	4b	37	10	1872
PATAPSCO RIVER						
Leading Lights for Craighill Channel Two bright fix. lts.	39 11.2 76 23.3	Inner lt. at S. end of Hart Id.; shown only down channel. Outer lt., iron lt.-ho., black, in 14 ft. water, near mouth of Patapsco Riv., $2\frac{1}{2}$ miles from inner lt. It also shows a lower fixed lt. at 17 ft., down the channel. The lts. in line N. $\frac{1}{2}$ E. lead in. Fog-bell	2a 5a	106 30	16 11	1874 1874
Seven-Foot Knoll One fix. red lt.	39 9.3 76 24.2	Black screw piles, S. side of entr. to Patapsco River. Fog-bell ev. 12 secs.	4a	43	11	1855
Fort Carroll One fix. bright lt.	39 12.8 76 30.8	On the fort. Fog-bell ev. 10 secs.	5a	37	10	1854
Hawkins Point Two bright fix. lts.	39 12.3 76 31.5	On iron piles. Lts. vertical. On shoal, on S. side of Patapsco River.....	2a	70 28	10	1868
Leading Point One bright fixed lt.	39 12.7 76 32.9	Brown tower, 40 ft. high, on N. side of Baltimore Harbour. In line with Hawkins Point lights, $1\frac{1}{2}$ mile to W. by N. $\frac{1}{2}$ N., lead up the channel	2a	70	14	1868
Lasaretto Point One fixed red light	39 15.7 76 34.	N. side of Baltimore Harbour. Fog-bell	4a	35	10	1831 1855
Pool Island One fixed bright lt.	39 17.4 76 15.7	White tower, 30 ft. high, off mouth of Gun- powder River. Fog-bell ev. 12 secs.	4a	35	10	1825 1855
Susquehanna River						
Turkey Point One fixed bright lt.	39 26.9 76 0.2	White tower, 30 ft. high, on bluff point, N. side of entrance to Elk and Susquehanna Rivers	4a	65	12	1833 1855
Fishing Battery One fixed bright lt.	39 29.6 76 4.7	On Fishing or Donoho's Battery	6a	36	10	1853
Havre de Grace One fixed bright lt.	39 32.4 76 4.8	Concord Point, entrance of Susquehanna River	6a	40	10	1825 1857
POTOMAC RIVER						
Piney Point One fixed bright lt.	38 8.1 76 31.5	E. side, about 14 miles N.W. of mouth	5a	35	10	1836 1856
Blakistone Island One fixed bright lt.	38 12.4 76 44.4	White tower, 41 ft. high, near entrance of Clement Bay	4a	46	11	1851 1856
Lower Cedar Point One fixed bright lt.	38 20.3 76 59.3	Screw pile lighthouse, in 3 ft. water, between Cedar and Yates Points. Fog-bell	●	35	10	1825
Mathias Point One fix. bright lt.	38 24.1 77 2.3	Screw piles red, lantern white, on shoal off pt. Fog Bell at Upper Cedar Point beacon. Bell	5	43	12	1876

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CHESAPEAKE BAY—(continued).						
POTOMAC RIVER—(continued).						
Fort Washington One fixed bright lt.	38 42.7 77 1.9	On the wharf	6a	..	6	1857
Jones Point One fixed bright lt.	38 47.4 77 2.1	Near Alexandria	5a	35	10	1855
Bowler Rock One fixed bright light	37 49.2 76 43.5	Pile lighthouse, on S. side of Rappahannock River, 26 miles above entrance. Fog-bell...	5a	35	10	1835 1868
NORTH CAROLINA.						
CURRITUCK BEACH One fix. & flashing lt.	36 21.8 75 49.3	Fixed bright lt., and red flash every 1½ min. Red brick tower, 150 ft. high.....	1c	157	18	1876
BODIES ISLAND One fixed bright light	35 49.3 75 33.4	Brick tower, rebuilt, black and white bands, 1½ mile N. of Oregon Inlet.....	1a	156	18	1872
CAPE HATTERAS 1. One flashing br. lt., 10 secs. 2. One fixed bright lt.	35 15.1 75 31. 75 31.	1. Tower, 180 ft. high, black and white spiral bands, about 2 miles N. of cape. Dangerous shoals 9 or 10 miles to S.E..... 2. Beacon light on red frame, 500 yds. from extremity of point.....	1b 6a	185 25	22 9	1798 1857
PAMPLICO SOUND						
Oliver Reef One red flash. lt. 30 s.	.....	Pile lt.-ho., in 7 ft. water, on reef, Hatteras Inlet, Pamlico Sound. Fog-bell 8 secs.	4b	36	11	1874
Ocracoke Island One fixed bright lt.	35 6.5 75 58.9	White tower, 65 ft. high, on W. end of island, N. side of entrance to the inlet.....	4a	75	15	1823 1854
Royal Shoal, S.W. Pt. One fixed bright lt.	35 7. 76 7.	White screw piles, in 7 ft. water, on S.W. point.....	4a	38	10	1826 1867
Royal Shoal, N.W. Pt. One fixed & flash. lt.	35 9.2 76 9.2	White screw piles, in 6 ft. water, on N.W. point. Flash every 1½ min. Fog-bell	4d	33	10	1857
Harbour Island One bright fixed lt.	35 0.5 76 13.	White screw piles on bar, between Pamlico and Core Sounds. Fog-bell.....	5a	34	10	1836
Brant Island Shoal One fixed bright lt.	35 8.1 76 17.3	Pile lt.-ho. in 7 ft., on S.E. pt. of shoal, in S. pt. of Pamlico Sound. Fog-bell ev. 20 secs....	5a	..	..	1851 1877
Neuse River One bright fixed lt.	35 5.3 76 32.6	Pile lighthouse, in 5 ft. water, off Marsh Point, W. side of entrance to Neuse River. Fog-bell	5a	38	11	1828
Pamlico Point One fixed bright lt.	35 19.4 76 31.3	White tower, 34 ft. high, on S. side of entrance to Pamlico River	5a	37	11	1828 1856
Long Shoal One bright fixed lt.	35 34. 75 42.	White pile lighthouse, on E. point of shoal, in 9 ft. water. Fog-bell	4a	35	10	1854 1867
Roanoke Marshes One fixed red light	35 48.5 75 41.8	White pile lighthouse, in 9 ft. water, on E. side of channel, between Pamlico and Croatan Sounds. Fog-bell.....	4a	33	11	1824 1877
Croatan One fixed bright lt.	35 57.6 75 47.4	White screw piles, between Croatan and Albemarle Sounds. Fog-bell every 15 secs.	4a	35	10	1835 1866
Wade's Point One fixed bright lt.	36 9.1 75 58.3	White pile lighthouse, on end of shoal, West side of Pasquotank River, Albemarle Sound.	5a	31	10	1854 1866
North River One fixed red light	36 9.3 75 53.5	On screw piles, in 3½ ft. water, on bar of Albemarle Sound. Fog-bell	5a	35	10	1866
Roanoke River One fixed bright lt.	35 56.8 76 41.4	White screw piles, in 7½ feet water, near entrance. Fog-bell ev. 5 secs	4a	35	10	1835 1877

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CAPE LOOKOUT One fixed bright light	34 37.3 76 31.1	Tower, 150 ft. high, chequered black and white, near end of cape. The old tower is painted in red and white horizontal bands. Lt. shown to eastward from N.N.E. to W.N.W. Dangerous shoals extend 11 miles to S.S.E. from the lt.	1a	156	22	1812 1859
Federal Point One fixed bright light	33 57.6 77 55.2	White tower, 45 ft. high, on N. side of inlet. N. of entrance of Cape Fear River	4a	50	12	1816 1866
Fryingpan Shoals Lt.-V. Two fixed bright lts.	33 35. 77 50.	Painted yellow; schooner-rigged. In 10 fms., 1 mile from outer shoal. Fog-bell and horn	●	40	12	1854
CAPE FEAR RIVER						
Oak Island Two fixed bright lts.	33 53.4 78 1.6	On E. end of island, 3 miles below Wilmington. In one, N. $\frac{1}{2}$ E., 267 yds. apart, lead over the bar	6a 4a	33 45	9 ..	1849 1866
Price's Creek	33 56.1 77 59.2	Light uncertain .....	..	..	..	....
Campbell's, or Big Id.	34 6.9 77 56.	Light uncertain .....	..	..	..	....
Orton's Point	34 3.4 77 56.2	Light uncertain .....	..	..	..	....
Upper Jetty Range	34 12.8 77 56.3	Light uncertain .....	..	..	..	....
SOUTH CAROLINA.						
Georgetown One fixed bright light	33 13.4 79 10.9	White tower, 82 ft. high, at East side of entrance to Pedee River	4a	85	15	1801 1867
CAPE ROMAIN One rev. br. lt., 1 min.	33 1.1 79 22.2	On Raccoon Key. New red brick tower, 150 ft. high. Old tower, 65 ft. high, and white-washed, stands near. Shoals extend 6 miles beyond the cape	1b	154	20	1827 1866
Bull's Bay One fixed bright light	32 55.3 79 33.7	Red brick house on N. end of island	4a	35	11	1852
Rattlesnake Shoals Lt.-V. Two fixed bright lights	32 44.1 79 43.6	White hull; two masts; in 5 $\frac{1}{2}$ fathoms, with Fort Sumter W. $\frac{1}{2}$ N., and red beacon on Morris Island W. by S. $\frac{1}{2}$ S. Fog-horn and bell	●	44	12	1854
CHARLESTON HARBOUR						
Morris Island 1. One fixed br. lt. 2. Two red fixed lts.	32 41.9 79 52.5	1. Tower, 150 ft. high, painted in black and white bands; near South end of Morris Id. Cata-dioptric light	1 5a 5a	152 20 40	18 7 9	1876 1870
		2. Two beacons on S. end of island; E. tower, red; West, black. Two lts. in one, 380 yds. apart, bearing W. by N. $\frac{1}{2}$ N., lead over the bar into the main ship channel, which is shifting to the southward				

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
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CHARLESTON HARBOUR—(continued).

Sullivan's Island Two fixed red lights	32 47. 79 51.	One on N.E. bastion of Fort Moultrie; the other by the cove, 300 yds. to northward. In one, lead through main ship channel.....	5a 6a	57 34	10 10	1848 1: 72
Fort Sumter One fixed bright light	32 45.1 79 52.3	On the fort, on West side of entrance.....	5a	57	10	1855 1866
Fort Ripley Shoal One fixed red light	32 45.8 79 54.	Pile lt.-ho., painted yellow, in 8 ft. water .....	..	43	12	1876
ST. HELENA SOUND One rev. br. lt., $\frac{1}{2}$ min.	32 23. 80 25.	Lt.-ho. white to top of foliage, black above, on Hunting Id., S. side of entr. to Sound ...	2b	132	17	1875
Martin's Industry Lt.-V. Two fixed bright lights.	32 5.5 80 35.2	Painted red, schooner-rigged, at 15 miles seaward of Tybee light. Fog-horn and bell ...	●	44	12	1839 1855

GEORGIA.**SAVANNAH RIVER**

Daufuskie Island Two fixed bright lts.	.....	High lt. N. $\frac{1}{2}$ W., 750 yds. from low lt. Leading lts. for channel, from Tybee Roads into Calibogue Sound.....	5a 5a	61 18	.. ..	1873
TYBEE ISLAND Two fixed bright lts.	32 1.3 80 50.5	Main light, a white tower, 134 ft. high, on N.E. end of the island, S. side of entrance to Savannah River; beacon light on a white tower, 50 ft. high, on N.E. extreme of island, $\frac{1}{2}$ of a mile E. of main light	1a 4a	150 65	20 12	1793 1822
Tybee Knoll Lt.-Ves. One fixed bright lt.	.....	Painted red, on knoll, $1\frac{1}{2}$ mile W.N.W. of main light. Fog-bell and horn.....	●	40	10	1848 1857
Cockspur Island One fixed bright lt.	32 1.4 80 52.6	On a knoll, off E. end of the island	6a	25	9	1849 1856
Tybee Knoll Beacons Two bright fix. leading lights	32 2. 80 54.3	At E. end of Long Island. Beacons painted white. In line, W. $\frac{1}{2}$ S. 717 yds. apart, lead through dredged channel from Tybee Road into Savannah River	6a 6a	44 21	.. ..	1878 1878
Oyster Beds One fixed red light	32 2.3 80 53.5	Opposite Cockspur Island, to mark South channel. Fog-bell.....	6a	35	9	1849 1856
Fig Island One fixed bright lt.	32 4.9 81 3.6	On E. end of island, in Savannah River. Fog-bell	6a	26	9	1848 1856
SAPELO ISLAND 1. One fixed & flash. lt. 2. One fixed bright lt.	31 23.5 81 16.9	1. Tower, 70 ft. high, red and white horizontal bands, S. end of island, N. side of Doboy Sound. Flash every 45 seconds	4c 6a	79 50	14 11	1820 1854 1858
Wolf Island Two fixed bright lts.	31 21.1 81 16.5	White towers, 38 and 30 ft. high, near N. end of island, S. side of Doboy Sound	6a ..	38 30	10 10	1822 1856
ST. SIMON'S ISLAND One fix. and flashing lt.	31 8. 81 23.4	White tower, 100 ft. high, on N. side of Sound. Bright fixed light, with alternate red and bright flashes every minute .....	..	..	..	1811 1872
LITTLE CUMBERLAND ISLAND One fixed bright light	30 58.6 81 24.6	White tower, 61 ft. high, on S. side of entrance to St. Andrew Sound and Santilla River ...	3a	78	14	1838 1866

Name and Character of Light.	Lat. N. Long. W. o ,	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
FLORIDA.						
AMELIA ISLAND	30 40.4	1. White tower, 58 ft. high, 2 miles from N. end of island	3b	112	16	1839
1. Fix. & fl. br. lt. $1\frac{1}{2}$ m.	81 26.3	2. From black beacon, 1,200 yds. N.E. of main lt. In one, S.W., lead over bar until N. Range lts. come in line.....	6a	27	10	1868
2. One fixed bright lt.						
North Range Beacons	30 42.2	On N. end of Amelia Id. High tower white, 40 ft. high; low tower brown, 25 ft. high ...	6a	35	11	1872
Two fixed bright lts.	81 26.4		6a	53	12	1872
ST. JOHN'S RIVER	30 23.7	1. Red tower, 74 feet high, on South side of entrance to Jacksonville	3a	84	14	1829
1. One fixed bright lt.	81 24.7	2. Screw pile lightho., in 6 ft. water, off Dames Point; pass on either side	5a	36	10	1872
2. One fixed bright lt.						
ST. AUGUSTINE	29 53.	A new lighthouse near old one, painted in black and white spiral bands, 150 ft. high, on N. end of Anastasia Id., S. side of entr.	1c	160	19	1874
One fixed lt., with flash every 3 minutes	81 17.					
CAPE CANAVERAL	28 27.	New iron tower, 55 ft. high, black and white belts, on N.E. pitch of cape. Dangerous shoals lie from 6 to $11\frac{1}{2}$ miles to north-eastward from the cape	1b	139	18	1847
One br. rev. lt., 1 min.	80 33.					1868
JUPITER INLET	26 55.4	Red brick tower, 94 ft. high, between the inlet and Gilbert Bar. Fixed lt., with flash every $\frac{1}{4}$ min.	1c	146	18	1860
One fix. & flash. br. lt.	80 5.1					
CAPE FLORIDA (Fowey Rocks)	25 35.3	Iron lt.-ho., painted brown, in 5 ft. water, 50 yds. S. of beacon P. Keeper's dwelling white. Catadioptric (reflector and lens) of the first order .....	..	110	16	1878
One fixed bright light	80 5.8					
CARYSFORT REEF	25 13.3	Iron piles, 112 ft. high, dark brown colour, on the reef	1b	106	18	1852
One rev. br. lt., $\frac{1}{2}$ min.	80 12.7					1857
ALLIGATOR REEF	24 51.	White iron framework and dwelling, in 5 ft. water, near N.E. point of reef. Five bright flashes, then one red.....	1b	143	18	1873
One flashing lt., 5 secs.	80 37.					
SOMBRERO SHOAL	24 37.6	Edge of the shoal, pile lt.-ho., dark colour, 149 feet high, near Coffin Patches and Sombrero Key	1a	144	18	1857
One fixed bright light	81 6.7					
SAND KEY	24 27.2	Dark tower, 121 ft. high, on a small islet, $7\frac{1}{2}$ miles S.W. of Key West Light. Fixed lt., with flash every 2 minutes	1c	110	18	1826
One fixed and flash. lt.	81 52.7					1853
KEY WEST						
S.W. Point of Island	24 33.	White tower, 55 ft. high, $\frac{1}{2}$ a mile inland	3a	70	13	1825
One fixed bright lt.	81 48.1					1858
N.W. Passage	24 37.1	On iron screw piles, in 6 ft., on N.E. point of reef, $6\frac{1}{2}$ miles N.W. by W. from Key West	4a	40	12	1838
One fixed bright lt.	81 54.1					1854
DRY TORTUGAS						
LOGGERHEAD KEY	24 38.2	Round tower, 150 ft. high, upper part black, lower white, on centre of W. Key	1a	152	20	1858
One fixed bright lt.	82 55.7					
Garden or Bush Key	24 37.8	Brown tower, 65 ft. high, on Fort Jefferson ...	4a	70	14	1825
One fixed bright lt.	82 52.9					1868

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
EGMONT KEY One fixed bright light	27 36. 82 46.2	White tower, 81 ft. high, on the Key, at entrance of Tampa Bay	4a	86	15	1848 1857
CEDAR KEYS One fixed and flash. lt.	29 5.8 83 4.8	White tower, 43 ft. high, on S.E. point of Seahorse Key. Flash every minute. A reef extends 12 miles to S.W.	4d	75	15	1854
ST. MARK'S HARBOUR One fixed bright light	30 4.4 84 10.6	White tower on East side of entrance	4a	73	14	1829 1856
DOG ISLAND	29 46.8 84 38.6	White tower, 44 ft. high, on East side of middle entrance of St. George's Sound Destroyed by hurricane in 1873	4b	48	13	1838 1866
CAPE ST. GEORGE One fixed bright light	29 35.2 85 2.7	White tower, 70 ft. high, on the cape.....	3a	77	15	1847 1857
CAPE ST. BLAS One rev. br. lt., 1½ min.	29 39.8 85 21.6	White tower, 86 ft. high, 2 miles from South point of cape. Dangerous shoals extend 6 miles to S.S.W.	3b	96	16	1847 1858
PENSACOLA 1. One rev. br. lt., 1 m. 2. One bright fixed lt.	30 20.8 87 18.4	1. Black and white tower, 160 ft. high, near Barrancas, S. side of Pensacola Bar 2. Bar beacon, white, 150 yds. to S.S.E. & E. from main lt. In one, N.N.W. ¼ W., lead over the bar.....	1b ..	210 ..	21 4	1824 1869 1859
ALABAMA.						
MOBILE BAY						
SAND ISLAND One bright fixed lt.	30 11.3 88 1.9	New brick tower, painted black, 140 ft. high, on a low island, 3 miles S.S.W. of Mobile Point	2a	132	17	1864 1873
Mobile Point One fixed <i>red</i> light	30 13.7 88 1.5	New tower, 37 feet high, painted black, on S.W. bastion of Fort Morgan, E. side of bay	4a	50	10	1864 1873
Choctaw Point One fixed bright lt.	30 40.2 88 1.1	Screw pile lighthouse, in 7 ft. water, ¾ of a mile E. of the point. Fog-bell	4a	46	12	1872
MISSISSIPPI AND LOUISIANA.						
MISSISSIPPI SOUND						
Horn Island Bright fixed lt., <i>red</i> flash every min.	30 13.5 88 30.0	Pile lighthouse on E. end of island, Mississippi Sound. Fog-bell struck every ¼ minute ...	4c	42	12	1874
Round Island One fixed bright lt.	30 17.5 88 34.2	White tower, 45 ft. high, on island off Pascagoula Bay. Hidden by woods to northward between N.W. by N. ¼ N. & N.E. by E. ¾ E.	4a	51	12	1833 1856
East Pascagoula River One fixed bright lt.	30 21.1 88 33.1	At East Pascagoula	5a	35	10	1854
Ship Island One fixed <i>red</i> lt.	30 12.9 88 57.	White tower, 48 ft. high, on W. end of island	4a	51	13	1853
Biloxi One fixed bright lt.	30 23.7 88 53.2	White iron tower, 48 ft. high, at W. entrance to bay.....	4a	62	13	1848 1856

Name and Character of Light.	Lat. N. Long. W. o /	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Viable in Miles.	Year established.
MISSISSIPPI SOUND—(continued).						
Cat Island One fixed & flash. lt.	30 14.0 89 8.7	Screw pile lighthouse, on W. end of island. Flash every $1\frac{1}{2}$ minute	5a	45	11	1871
Pass Christian One fixed bright lt.	30 18.7 89 14.	White tower, 30 ft. high, on mainland, $\frac{1}{2}$ miles N.W. of Cat Island light	4a	42	12	1831 1857
Merrill Shell Bank One fixed bright lt.	30 14.3 89 14.5	A pile lighthouse, between Cat Island and Grand Island. Fog-bell and horn	4a	45	11	1860
St. Joseph's Island One bright fixed lt.	30 11.1 89 24.6	White, on brick pier, 34 ft. high, at entrance to Lake Borgne	5a	35	9	1865
Proctorsville One fixed bright light	29 52.4 89 39.5	Near fort at Proctorsville, Lake Borgne.....	6a	39	10	1850 1858
LAKE PONTCHARTRAIN						
West Rigolets One fixed bright lt.	30 10.6 89 43.6	At East entrance of Lake Pontchartrain	5a	30	10	1855
Herbes Point One fixed red light	30 9.5 89 51.5	Near extr. of point, on keepers' dwelling. Lt. shown northwd. betw. S.W. & W. & S.E. & E.	5a	40	11	1875
Port Pontchartrain One fixed & flash. lt.	30 1.8 90 2.7	White house near E. end of railroad. Flash every $1\frac{1}{2}$ minute	5c	35	10	1838 1855
Bayou St. John One bright fixed lt.	30 1.9 90 4.	Screw pile lighthouse, 5 miles North of New Orleans	6a	39	10	1811 1855
New Canal One bright fixed lt.	30 1.7 90 5.8	At the entrance of the canal	5a	33	10	1838
Tchefuncte River One bright fixed lt.	30 23. 90 6.	Near Madisonville	5a	38	10	1837
Manchao Pass One bright fixed lt.	30 17.8 90 12.7	On S. side of Pass, between Lakes Maurepas and Pontchartrain	5a	45	12	1838 1857
CHANDELEUR ISLAND						
One fixed bright light	30 3.1 88 51.6	White tower, 50 ft. high, on N. end. Good anchorage inside the point, with the light bearing N.E. about 2 miles.....	4a	50	13	1848 1855
MOUTHS OF MISSISSIPPI						
PASS A L'OUTRE One fixed & flashing bright light	29 11.5 89 1.5	Black tower, 69 ft. high, on Middle Ground Island, N. side of entrance. Flash every 45 seconds. Steam Fog-whistle	3c	77	15	1855 1858
SOUTH PASS One rev. br. lt., $1\frac{1}{2}$ m.	29 1. 89 10.	Wood tower, slate coloured, 54 ft. high, on Gordon Id., S.W. side of Pass. Whistle-buoy in 10 fms., S.E. of lt.-ho. Pass disused. Lt.- ho. not to be approached nearer than 4 miles	3b	60	13	1831 1858
Deer Island One fixed bright lt.	29 8.6 89 15.1	At junction of S.W. & N.E. Passes. Fog-bell, 2 blows and 1 blow every 10 and 20 secs. ...	5a	..	5	1852
SOUTH-WEST PASS One fixed bright lt.	28 58.5 89 23.5	New black tower, $\frac{1}{2}$ mile S. by W. & W. from former lt.-tower, on W. side of entr. of river. Steam Fog-whistle, 2 blasts every min.	1a	128	17	1831 1873

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Barrataria Bay One fixed bright light	29 16.2 89 55.	White tower, 55 ft. high, on West end of Grande Terre Island.....	4a	60	13	1864
TIMBALLIER ISLAND Bright fix. lt., with red flash every minute	29 1. 90 18.	Screw pile lighthouse, in 7 ft. water, painted black	2c	110	16	1875
SHIP ISLAND SHOAL One fixed and flash. lt.	28 55. 91 4.	Black iron pile lighthouse, 125 ft. high, off Racoon Point. Fixed lt., with flash every $\frac{1}{2}$ min. Fog-bell	2d	110	17	1860
SOUTH-WEST REEF One fixed light	29 25. 91 30.	Iron piles, black, on reef, at entr. of Atochafaya Bay. Fog-whistle 10 secs. ev. 30 secs.	4a	49	12	1859
Calcasieu River One fixed bright light	29 46. 93 17.5	White pile lt.-ho. on E. pt. of entr. to river...	4	55	13	1876
SABINE PASS One fixed and flash. lt.	29 43.9 93 50.3	White tower, 75 ft. high, on Brant Point, E. side of river. Flash every $\frac{1}{4}$ minute.....	3d	85	16	1858

TEXAS.

GALVESTON BAY

Lightvessel One bright fixed lt.	.....	Painted straw colour. In $4\frac{1}{2}$ fathoms inside the bar. Fog-bell and horn .....	..	47	11	1849 1870
BOLIVAR POINT One fixed bright lt.	29 22. 94 45.5	New iron tower, black and white horizontal bands, $\frac{1}{4}$ a mile W.S.W. from former light-house. North side of entrance to Galveston	3a	117	17	1872
Half-moon Shoal One fixed bright lt.	29 24. 94 50.6	Iron piles, white and red corners; between Pelican Island and Dollar Point. Fog-bell	6a	34	6	1854
Red Fish Bar One fixed bright lt.	29 30.8 94 51.7	Building white and bl. lantern To mark channel across Red Fish Bar. Fog-bell ...	6a	35	10	1854
Gloppers Bar One bright fixed lt.	29 41.2 94 56.5	White building, to mark the channel. Fog-bell	6a	35	10	1854

MATAGORDA BAY

Matagorda Island One rev. br. lt., $1\frac{1}{2}$ m.	28 21. 96 25.9	White wooden tower, on E. point of island, at entrance to Matagorda Bay	5b	35	10	1852
West Shoal One fixed bright lt.	28 25. 96 22.	White screw pile lighthouse, inside Decrows Point. On port side going in through the Swash Channel. Fog-bell every 10 secs. ...	4a	35	11	1872
East Shoal One fixed red light	28 25.5 96 22.	White screw pile lighthouse. On starboard side going in through the Swash Channel...	4a	35	11	1872
Half Moon Reef One fixed red light	28 33. 96 15.5	Pile lighthouse, on S. extremity of reef. Fog-horn every 5 minutes	6a	35	11	1858
Swash	28 26.5 96 22.5	Screw pile lighthouse opposite Adligator Head. Fog-horn every 5 minutes	5a	38	6	1858

ARANSAS PASS

One fixed bright light	27 52.4 97 3.	Brown tower, 55 ft. high, on Low Island, inside the Pass. Seen outside when bearing N.W. $\frac{1}{4}$ W.	4a	60	13	1855
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BRAZOS SANTIAGO

Padre Island One fixed bright lt.	26 4. 97 9.	Square white tower, 28 ft. high, on S. side of entrance to Brazos Santiago	5a	35	10	1852
ISABEL POINT One fixed & flash. lt.	26 4.9 97 11.1	White tower, 57 ft. high, on the point. Flash every minute	3d	82	16	1852 1866

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
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WEST INDIES.

BAHAMA ISLANDS (BRITISH).

ABACO One rev. br. lt., 1 min.	25 51.3 77 11.2	White and red tower, 85 ft. high, on S.E. point, or Hole-in-the-Wall.....	●	160	16	1848
Little Guana, or Elbow Cay One fixed bright lt.	26 30.5 76 58.2	Circular stone tower, 77 ft. high, $\frac{1}{2}$ of a mile inland.....	1a	190	18	1863
GREAT STIRRUP CAY One fixed bright light	25 49.7 77 53.9	Stone tower, 46 ft. high, white, with two red bands. Shown northward from S.E. by E. to S.W.....	3a	81	14	1863
NASSAU HARBOUR 1. One fixed bright lt. 2. One fixed bright lt.	25 5.6 77 22.4	1. Stone tower, 58 ft. high, on W. pt. of Hog Id. Shown northward A red lt. is shown from a flagstaff near the lighthouse when Nassau Bar is impassable 2. On Athol Id., E. of Hog Id., from cupola of Quarantine Office. Lt. vis. betw. E. by S. $\frac{1}{2}$ S. and S.S.E. $\frac{1}{2}$ E.	●	68	10	1816 1847
GREAT ISAAC One rev. br. lt., $\frac{1}{2}$ min.	26 2. 79 6.5	Tower, 145 ft. high, with red and white bands, on island, at N.W. end of Great Bahama Bank	●	158	16	1859
GUN CAY One rev. red lt., $1\frac{1}{2}$ min.	25 34.6 79 18.8	Tower, 70 ft. high, upper part red, lower white, near S. point. Hidden by Bimini Islands, 8 miles to N., or from N. by E. $\frac{1}{2}$ E. to N. $\frac{1}{2}$ W.....	..	80	12	1836 1873
CAY SAL BANK One fixed bright light	23 56. 80 28.5	Tower, 58 feet high, lower part red, upper white, on North elbow, of Planquata Cay. Hidden by Water Cay, 9 miles to N.E. $\frac{1}{2}$ E.	..	96	14	1839
Anguila <i>Proposed</i>	23 29. 79 32.	Fixed and flashing light proposed on S.E. cay	4d	..	..	....
CAY LOBOS One fixed bright light	22 22.5 77 35.1	Iron tower, 130 ft. high, with black and white bands, on cay, N. side of Old Bahama Chan.	1a	146	16	1860
CROOKED ISLAND PASSAGE Bird Rock One rev. br. lt., $1\frac{1}{2}$ m.	22 50.7 74 22.5	Stone tower, 112 ft. high, off N.W. part of Crooked Id. Rocks extend N. by W. $\frac{1}{2}$ W. 1 mile from lighthouse.....	2b	120	17	1876
Castle Island One bright fixed lt.	22 6.7 74 20.7	Tower, 114 ft. high, white, with 3 red bands, $\frac{1}{2}$ of a mile within S.W. part of Castle Id. ...	2a	123	17	1868
GREAT INAGUA ID. One br. rev. lt., 1 min.	20 56. 73 40.8	Tower, 114 ft. high, white and red bands, 2 miles N.W. from S.W. point	2b	120	17	1870
TURKS ISLAND One br. revol. lt., $\frac{1}{2}$ m.	21 31. 71 7.7	White iron tower, 60 ft. high, at 400 yards within N. end of the island.....	●	108	15	1852

CUBA (SPANISH).

ST. IAGO DE CUBA One rev. br. lt., 2 min.	19 57.7 75 54.3	White iron tower, 20 ft. high, to E. of Mora Castle.....	4b	223	20	1842
CAPE CRUZ One fixed & flashing lt.	19 50.2 77 44.5	Stone tower on the cape. Red flash ev. $\frac{1}{2}$ min.	2c	114	15	1871
XAGUA, or CIENFUEGOS One fix. & flash. br. lt., 2 min.	22 1.2 80 30.3	Villa Nueva Tower, 45 ft. high, on Colorado Point, E. of entrance.....	3b	81	14	1861

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
Piedras Cay One fixed bright light	21 57.8 81 3.3	Brown tower, 26 ft. high, on N. part of cay. Guide to Cochinco Bay.....	4a	30	7	1863
Batabano One fixed bright light	22 41.4 82 18.3	Lantern, on a mast .....	..	31	3	1847
Isle of Pines <i>Proposed</i>	21 26. 83 6.	Proposed revolving light on Cape Pepe	2b	111	16	....
CAPE SAN ANTONIO One rev. br. lt., $\frac{1}{2}$ min.	21 51.8 84 58.1	Roncalle Tower, 107 ft. high, on the cape, W. point of Cuba	2b	107	20	1850
Jutias <i>Proposed</i>	22 43.3 84 6.5	Proposed fixed and flashing light.....	2c	..	..	....
Gobernadora <i>Proposed</i>	23 0. 83 13.2	Proposed revolving bright light on the point	2b	..	..	....
HAVANA One rev. br. lt., $\frac{1}{2}$ min.	23 9.3 82 22.1	O'Donnell tower, 79 ft. high, on Moro Castle, E. side of entrance.....	1c	170	21	1847
Guanos <i>Proposed</i>	23 9. 81 42.	Proposed revolving bright light	3b	..	..	....
CARDENAS BAY						
Piedras Cay One fixed & flash. lt.	23 14.4 81 7.3	White tower, 67 ft. high. A red flash every 3 minutes	4d	74	10	1857
Cayo Diana One fixed bright lt.	23 9.9 81 7.	On an iron column.....	..	43	7	1862
Crux del Padre One bright fixed light	23 17.1 80 54.2	White tower, 46 ft. high, on reef, $\frac{1}{2}$ mile N.E. from the cay. Reported to show a red flash for 10 secs., br. flash 30 secs., and dark 20 secs. in ev. min.	4a	49	10	1862
BAHIA DE CADIZ One rev. br. lt., 1 min.	23 12.6 80 29.3	White iron tower, 159 ft. high, on N.E. part of the cay.....	1c	175	24	1862
Port Sagua la Grande One fixed bright light	23 4. 80 4.	From a mast above a house, on N.W. point of Hicocal Cay, E. side of entrance	a	55	8	1872
CAY PAREDONE GRANDE One br. fix. & flash. lt.	22 29.4 78 9.7	White iron tower, 123 ft. high, on N. part. Flash every minute	1c	159	20	1859
NEUVITAS HARBOUR						
MATERNILLOSPPOINT One fix. & flash. br. lt.	21 40.2 77 8.9	Colon tower, 170 ft. high. Flash every minute	1b	174	23	1848
Barlovento, or E. Point One bright fixed lt.	21 37.3 77 5.3	On a mast above a yellow house	6a	49	9	1864
LUCRETIA POINT One rev. red lt., 1 min.	21 4.6 75 37.9	Stone tower, on N.E. coast of Cuba.....	2b	112	10	1868
Baracoa One bright fixed light	20 21.7 74 30.3	On an iron column above keeper's house	a	48	12	1870
CAPE MAYSI One fixed bright light	20 15.1 74 10.3	Round tower on the cape, East extreme of Cuba	2a	128	17	1862

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
JAMAICA (English).						
MORANT POINT	17 56.	White iron tower, 96 ft. high, on E. extreme of Jamaica. Visible only betw. S.S.W. $\frac{1}{2}$ W. and N.W. by N.....	..	115	15	1842
One rev. br. lt., 1 min.	76 11.7					
KINGSTON						
Plum Point	17 55.7	White tower to N. of the point. Shows red from S.E. by E. $\frac{1}{2}$ E. southward, to S. $\frac{1}{2}$ W.; thence bright over the shoals in the West part of Port Royal Bay up to N.W. ....	..	68	12	1854
One fixed red or br. lt.	76 47.					
Fort Augusta	17 57.	A lamp on the beacon. Light is red to East; bright to S. and W. Bearing N. by E. it leads through South Channel.....	..	40	..	....
One fixed red or br. lt.	76 53.					
HAITI OR SANTO DOMINGO						
SANTO DOMINGO	18 28.1	Tower, 100 ft. high, on San José Fort. No lts. in Haiti to be depended on .....	..	113	9	1853
One fixed bright lt.	69 52.5					
Jacmel Bay	18 12.	On summit of white cliff (Uncertain) .....	..	..	12	1867
One red fixed light	72 34.					
PUERTO RICO	18 28.7	White iron tower on upper battery of Morro Castle. Fix. lt. with flash of 5 secs. ev. min.	3c	171	18	1846
Fix. & flashing br. lt.	66 6.6					1876
Mayaguez Bay	.....	Two red leading lights on mole head .....	..	..	..	....
SANTA CRUZ, or ST. CROIX ISLAND						
Frederichstæd	17 42.7	Danish.] On Fort Frederichstæd .....	..	..	4	1857
One fixed bright lt.	64 52.7					
Christianstæd	17 45.4	On Louisa Augusta Fort .....	..	..	5	....
One bright fixed light	64 41.5					
ST. THOMAS	18 19.4	Danish.] On E. side of entrance, on Myhlenfelts Point. Visible from N. by E. by the West to E. by S.....	..	95	12	1844
One fixed bright light	64 55.1					1872
SOMBRERO ISLAND	18 35.7	British.] Iron framework lighthouse, red, 132 feet high, on S.E. side of the island, $\frac{1}{2}$ of its length from S. end.....	2b	150	20	1868
One br. rev. lt., 1 min.	63 27.8					
St. Martin Island	.....	(Dutch.) Small lt. on old Fort Amsterdam, W. side of Grande Bay .....	..	150	8	1876
One fixed bright light						
St. Christopher	17 18.	British.] On the beach at Basse Terre .....	..	37	6	1846
One fixed red light	62 42.8					
Montserrat	16 42.2	British.] Fixed lantern lt. for mail steamers, on the beach at Plymouth .....	..	..	..	....
One fixed light	62 13.					
Antigua						
English Harbour	17 0.	British.] Fixed triangularly; upper lt. red, for mail steamers .....	..	62	8	1843
Two br., one red lt.	61 45.3					
St. John Harbour	17 6.8	Black wooden lt.-ho., 53 ft. high, on Sandy Id., off St. John Harbour	●	56	13	1875
One fixed bright lt.	61 54.5					
Marigalante	15 54.	(French) .....	..	..	9	1867
One bright fixed light	61 17.					

Name and Character of Light.	Lat. N. Long. W. " "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
GUADALOUPE (French)						
Basse Terre Mole One red fixed light	16 0.2 61 44.8	On the mole. Also red lt. on end of wharf ...	.. | ..	2	1865	1870
Moule de Port One fixed bright lt.	16 20. 61 21.	Lamp light.....	.. | ..	7	1868	
Pointe à Pitre One fixed light	16 13.5 61 29.5	Lantern, South of town. Lights on buoys when mail steamer is expected.....	.. | .. | ..	....
Manroux Islet One fixed light	16 13.3 61 31.5	Lantern light .....	.. | .. | ..	....
Gozier Islet One fixed bright lt.	16 11.1 61 29.	.....	.. | .. | ..	....
PETITE TERRE One fixed bright lt.	16 10.5 61 5.1	Tower, 75 ft. high, near eastern part	3a | 108	15	....
Dominica One red light	15 17.4 61 23.1	British.] On mole, on Roseau Point, for mail steamers .....	.. | .. | ..	1867		
MARTINIQUE (French).						
Caravelle Peninsula One fixed bright lt.	14 46.2 60 52.9	A white tower on Caracoli Mount, $\frac{1}{2}$ of a mile inland of N.E. extreme of island	1a | 410	25	1862	
Pointe des Negres One bright fixed lt.	14 36. 61 5.5	On a red mast, on the fort .....	.. | 62	11	1855	
Fort St. Louis One red fixed light	14 36.1 61 4.2	In S.W. part of fort. Lights on buoys when mail steamer is expected.....	.. | 131	6	....
Ste. Marthe Point One red, one coloured light	14 44.1 61 10.7	Red lt. to clear Milan. West lt. orange to N., green to S., blue to W. The white and blue lts. in line lead to the anchorage .....	.. | ..	5	1860	
St. Pierre Bay	.....	Light on the edge of the bank, for mail steamers .....	.. | .. | ..	1860		
ST. LUCIA						
Castries One fixed red light One red, one green lt.	14 1.5 61 0.1	British.] Red lt. on Tapion Battery, South entrance of Castries Harbour; lt. for mail steamers. Red lt. on Vieille Ville Shoal; green lt. on Cocoa-nut Shoal .....	.. | 80	3	1843 1868	
St. Vincent One fixed bright light	13 10. 61 15.	British.] On Fort Charlotte.	.. | 640	6	1858	
Grenada One fixed bright light	.....	From Fort George flagstaff, St. George Har- bour, when mail steamer is expected .....	.. | ..	3	1876	
TRINIDAD One fixed bright light	10 38.7 61 31.9	British.] In Port Espana. Hexagonal tower, 43 ft. high, on the jetty. Shown seaward from S.W. to N.W.	4a | 50	15	1841	
Iscos Point One bright fixed lt.	.....	From a mast on S.W. point of Trinidad.....	.. | 39	5	1870	
TOBAGO One fixed bright light	11 10. 60 44.	British.] At Scarborough. Pentagonal tower, 57 ft. high, red and white, on Bacolet, or Red Point. Leading lts. on two white be- acons when mail steamer is expected.....	a | 128	12	1842	

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
BARBADOS (British)						
Carlisle Bay	13 5.	1. On Needham Point. Bright to S. of E., red to N. of E. Reported bright all round .....	..	34	5	1855
1. One fix. br. or red lt.	59 36.3	2. Bridgetown. At the mole-head of the Cárénage				
2. One fixed red lt.						
SOUTH POINT						
One rev. red lt. 1 m.	13 2.7 59 31.2	Tower 90 ft. high, with red and white bands. Does not show until it bears to westward of S.W. by W. Kept well open, it clears the Cobbler Reef .....	..	145	..	1852
RAGGED POINT						
One rev. br. lt. 2 m.	13 9.9 59 25.6	White tower, 97 ft. high, 300 yds. within cliff edge. Keep well to N.E. of light to avoid Cobbler Rocks.....	2b	213	21	1875
ORINOCO RIVER LT.-V.						
	.....	Moored in 14 ft. water 3 miles from coast & 7 miles N.N.E. from Barima Point. Lt. is not now made until the greatest dangers at the entrance of the river are passed.....	..	55	9	1875 1876
GUAYANA.						
CAYENNE (French)						
1. One fixed bright lt.	4 56.2 52 14.8	1. Bright lt. on wood framework, N. of Fort Cépéron.....	●	130	10	1863
2. One fixed green lt.		2. Green lt. on Infantry Barracks. In one, with white light S.E. by E., leads over Aimable Rock; keep to westward	●	69	8	1850
3. One red light		3. On jetty	●	39	..	1862
SALUT ISLETS						
One fixed bright light	5 17. 52 32.8	On the summit of the hospital, Royale Ialet...	●	200	18	1864
Enfant Perdu Rock						
One fixed bright light	5 2.7 52 15.9	A square iron pile tower on rock, 6 m. N. & W. of Cayenne. Shown betw. S.E. & S. & W. by S. & S., & also betw. N.E. & N. & W. by N. & N.	●	61	9	1864
MARONI RIVER						
1. One bright fixed lt.	5 42.5 53 56.3	1. (Dutch.) Tower, 70 ft. high, on W. side of entrance	4a	75	13	1871
2. One bright fixed lt.		2. (French.) White tower, 70 ft. high, on E. side of entrance	4a	75	13	1871
Surinam Lightvessel						
One fixed red light	6 1. 55 16.2	(Dutch.) In 14 ft. water, 3½ miles N.W. from Bram's Point. Red ball at masthead	●	25	8	1858 1862
Berbice Lightvessel						
One bright fixed light	6 29.2 57 23.8	(British.) Painted red; in 22 ft. water, 9 miles N.E. by N. from St. Andrew's Point. White flag, with red ball in centre, by day. Pilot sloop near.....	●	30	10	1850 1868
Demerara Lightvessel						
One bright fixed light	6 53.5 58 4.5	(British.) Painted red, one mast, in 19 feet N.N.E. & E. from lt.-ho., and 2 cables N. of "Antigua" wreck.....	●	30	10	1844 1876
DEMERARA RIVER						
One br. rev. lt., 1 min.	6 49.3 58 11.5	Octagonal tower, 100 ft. high, red and white vertical stripes, on E. side of entrance	4b	103	16	1829 1864

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
TIERRA FIRME.						
Carapano One bright fixed light	10 40.2 63 18.	A tower on the hill in front of the town .....	.. |	.. |	4 |	1865
Cumana One fixed bright light	.....	From tower on Custom-house .....	.. |	.. |	5 |	1877
LOS ROQUES Rev. br. lt. ev. min.	11 58.3 66 38.5	On N.E. hill, 150 ft. high, of El Roque. Appeared as fixed lt. in Dec. 1876. Apparatus out of order	3b |	208 |	15 |	1875
Puerto Cabello One revol. lt., 40 secs.	10 30. 68 0.	Square tower on Brava Point; red and bright flashes .....	.. |	79 |	14 |	1864
BUEN AYRE One fixed bright light	12 2.2 68 22.5	Dutch.] Tower, 75 ft. high, striped red and white vertically, on Laere Point, S. point of the island .....	● |	85 |	12 |	....
Little Curacao Island One fixed br light	11 58. 68 44.	Dutch.] On E. side of the island .....	● |	62 |	10 |	1850
Great Curacao Island One fixed bright light	12 6.2 68 55.2	Dutch.] St. Ann Harbour, on Rif Fort .....	.. |	.. |	.. |	1850
Cumarebo Bay	11 30. 69 25.	Uncertain light, 5 miles S.W. by W. $\frac{1}{2}$ W. from Manzanilla Point .....	.. |	49 |	6 |	1874
Oruba Island	.....	A fixed bright harbour lt. is shown at Puerto Cabello .....	.. |	.. |	4 |	1876
Maracaibo Building	10 58. 71 40.0	Stone tower, 30 ft. high, building on Zaparo Island .....	.. |	.. |	.. |	....
Rio de la Hacha	11 33. 72 59.	New Granada.] On the church. Apparatus reported as destroyed, and no light shown ...	.. |	69 |	6 |	1857
SANTA MARTA One bright fixed light	11 15.5 74 15.7	Lighthouse on the summit of the Morro .....	.. |	228 |	24 |	1870
PORT SAVANILLA One rev. br. lt., 2 min.	11 0.3 74 57.7	New Granada.] On a white tower on Nisperal Point. Guide to the anchorage to W. $\frac{1}{2}$ S. of it. Does not show N. of N.W. $\frac{1}{2}$ N.	5b |	98 |	16 |	1872 1875
Limon, or Navy Bay One fixed bright light	9 23.8 79 53.	New Granada.] Open frame, white, on N.W. part of Manzanillo Island, at Colon, or Aspinwall .....	.. |	60 |	10 |	1852
Cape Honduras	16 1. 86 3.	On the cape, or Point Castilla, Truxillo Bay. Lightho. destroyed. Temporary lt. shown .....	.. |	.. |	4 |	....
ROATAN ISLAND One fixed bright light	.....	Shown between W.S.W. and E.S.E. Bearing N.E. by N. leads into Coxen Road .....	.. |	90 |	14 |	1875
HALF-MOON CAY One fixed bright light	17 12.3 87 32.4	British.] White iron tower, 100 ft. high, on S.E. point .....	● |	38 |	18 |	1848
Bokel Cay One red, one bright lt.	17 8.8 87 56.4	Hung horizontally on a yard. Guide to Half-moon Channel	a |	53 |	7 |	1868
Belize Three fixed bright lts.	17 19.6 88 4.	British.] Two on S. side, on English Cay. One on Custom-house flagstaff	6a |	95 |	3 |	1846 1863
Mauger Cay Three bright fixed lts.	17 37.2 87 45.7	In one iron framework tower, 57 ft. high, on the Cay, one of the Turneff cays, $\frac{1}{2}$ mile within N. end of reef; facing to the N.E. and S.W., northern approach to Belize	4a |	53 |	13 |	1816 1868
MEXICO.						
Progreso One bright fixed light	21 18. 89 33.	On roof of Custom-house, near the pier-head, at Progreso (Tuxula), N. coast of Yucatan .....	.. |	.. |	6 |	1874
Sisal One fixed bright light	21 10. 90 3.	Mexican.] Tower, 56 feet high, on the castle. Doubtful lt., Sisal not being port of entry ...	.. |	60 |	10 |	1852
Campeche One bright fixed light	19 50. 90 33.	Mexican.] On church tower, in S.W. part of the town. (Uncertain) .....	.. |	95 |	14 |	1864

Name and Character of Light.	Lat. N. Long. W. a	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
XICALANGO ISLAND One br. rev. lt., $\frac{1}{2}$ min.	18 37.8 91 54.8	Mexican.] Round red and white tower, on W. side of entrance to Laguna de Terminos.....	2b	100	14	1866
Goatsacalcos River One fixed bright light	18 12. 94 17.	Mexican.] On old look-out tower, $\frac{1}{2}$ a mile from the beach, on W. side of the entrance	..	..	12	1860 1869
VERA CRUZ 1. One rev. br. lt. 45 s. 2. One br. fix. & flash. lt.	19 11.5 96 8.9	1. White lt.-ho., 60 ft. high, on W. part of S. Juan de Ulloa Fort..... 2. Tower, painted blue and white stripes, on old convent of San Francisco, $\frac{5}{8}$ cables S.S.W. $\frac{1}{2}$ W. from old lt. in the castle of San Juan de Ulloa. Flashes every minute.....	.. 4c	80 102	15 15	.... 1872
Tampico One fixed bright light	22 16.7 97 47.	Mexican.] Tower on North point of entrance. Said to be visible 7 or 8 miles.....	..	..	..	1865

Name and Character of Light.	Lat. S. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
SOUTH AMERICA.						
BRASIL.						
PARA' RIVER LT.-VES. One revolving bright lt.	0 25.4 47 55.	Iron ship; one mast. In 15 fathoms, about 1½ mile N. of the Breganza Shoal. Lt. eclipsed 5 seconds every 5 minutes. Pos. uncertain	●	30	3	1869
PARA' One revolving br. lt. 2 m.	0 34. 47 17.1	White tower on Atalaia Point .....	..	1	17	1852
ITACOLOMI One revolving lt., 2 m.	2 10. 44 24.	Square tower, 75 feet high, on the point. Flashes red and bright alternately .....	..	147	15	....
Alcantara Point (One fixed light)	2 25. 44 22.	Guide for the anchorage before Alcantara.....	..	..	..	1860
MARANHAM One fixed bright light	2 29.5 44 18.	San Luis, on San Marcos Fort	1a	..	10	1829
SANTA ANNA One rev. br. lt., ½ min.	2 16.5 43 38.4	Square white tower, 80 ft. high, on E. part of the island	1b	70	14	1861
PARANAHYBA RIVER One bright fixed light	2 50. 41 44.	On Point Pedra do Sal, near the Barra Velha entrance, N. coast of Brazil	4a	..	10	1874
Gonzalo River Lt.-Vessel One fixed light	3 24. 39 2.5	Off the entrance.....	..	30	..	1868
CIARA One rev. br. lt., ½ min.	3 42.1 38 27.5	New lighthouse, 50 ft. high, on site of former tower, on Point Macoripe	4b	85	13	1847 1872
Aracati	4 23. 37 43.	Fixed light reported on Massalo Point .....	..	..	..	....
Rio Grande do Norte One fixed bright light	5 45. 35 13.2	Round tower on fortress of Santos Reis Magos .....	..	43	12	1860
PARAHIBA One br. rev. lt., 1 min.	6 56.5 34 49.	On Pedra Secca Rocks, on Cabedello Bar, entr. of Parahiba River, ½ mile from Point Matto	..	52	12	1874
Olinda Point One intermittent wh. lt.	8 0.8 34 50.5	On Montenegro Fort.....	4b	62	10	1872
PERNAMBUCO One rev. br. & red lt. 1 m.	8 3.7 34 51.7	On the reef, 50 yds. from Picao Fort. Flashes twice bright, and once red, alternately .....	..	..	22	1824
MACEIO One fixed and flash. lt.	9 39.3 35 40.	West part of mountain, 1 mile from the anchorage. Fixed lt., with flash every 2 min. Also small red lt. on the pier .....	..	208	22	1856
SAO FRANCISCO RIVER One bright fixed light	10 27. 36 21.5	On N. point of river .....	..	69	11	1867
Cotinguiba Bar One fixed light	11 1. 36 59.5	On the watch-tower; lt. red to E., white to S.E., green to S. Anchorage with red lt. in sight. Pilots near mooring buoy, S.E. ½ S., 4 miles from lighthouse .....	..	115	7	1863
Itapuan Point One bright fixed light	12 58. 38 21.	A round iron tower on Piraboca Rock, 1 cable off Itapuan Point, N.E. of Bahia .....	..	68	14	1873
BAHIA, or San Salvador 1. One rev. lt., 1½ min. 2. One fixed bright lt. 3. One fixed red light	13 0.9 38 31.7	1. On Fort San Antonio. Flashes twice bright, and once red alternately .....	..	140	18	1823
		2. On Fort Sta. Maria	6a	..	6	1876
		3. On Fort do Mar.....	..	..	..	1864
MORRO DE S. PAOLA One rev. br. lt., 1 min.	13 22.6 38 51.8	White tower, 80 ft. high, on the Morro .....	..	276	20	1864
ABROLHOS ISLANDS One rev. br. lt., 1 min.	17 57.7 38 41.5	Round iron tower, 51 ft. high, on highest point of Santa Barbara Island	1b	189	17	1861
ESPIRITU SANTO One bright fixed light	20 19. 40 13.	On Santa Luzia Hill, on S. side of the bay.....	4a	66	12	1871

Name and Character of Light.	Lat. S. Long. W. o	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CAPE FRIO One rev. br. lt., 1½ m.	23 0.7 41 57.1	Stone tower, 53 ft. high, on Focinho de Cabo, ¾ of a mile S. of old lighthouse. Shown eastward from N.E. to W.	●	522	25	1862
RAZA ISLAND One revol. lt., 2½ min.	23 5.7 43 8.3	White square tower, 50 ft. high, on the island. Flashes 2 br. & 1 red alternately .....	..	315	14	1828
RIO DE JANEIRO 1. One fixed bright lt. 2. One red light	22 56.6 43 7.3	1. Bright lt., on Fort Sta. Cruz, on E. side of entrance 2. Red lt. on Calhabouco Point occasionally, for steamers.....	.. | ..	6		1839 1866
SANTOS One fixed bright light	24 2. 46 13.	White tower, 40 ft. high, on Moela Island.....	1a	324	24	1831
PARANAGUA BAY 1. One fixed bright lt. 2. One fixed bright lt.	25 32.7 48 18.3	1. Iron tower, 69 ft. high, on Conxas Point, I. do Mel, in South Channel 2. On fort, Ille do Mel; shown betw. S.E. & S. by E. and N. to N.N.W. ¼ W. ....	.. | ●	262 | 47	20 | 6	1872 1875
ST. CATHERINE One rev. br. lt., 1 min. Anhatomirim Islet One bright fixed lt.	27 49.5 48 32.7 27 25.5 48 34.3	Circular tower, on Pta. dos Naufragados, S. bar of St. Catherine On Fort Santa Cruz, N. entrance to Santa Catharina Strait.....	● | ..	149 | ..	18 | 4	1861 1873
RIO GRANDE DO SUL One rev. br. lt., 2 min.	32 7.3 52 4.4	On N. point of entrance, above a mile from the extremity	●	96	14	1851
Lagoa dos Patos						
Surregonea One bright light	31 44. 52 9.7	On the island. Lts. for the channels between Rio Grande and Porto Alegre .....	.. | ..	..	..	1860
Estreito	.....	Bright light on the point .....	.. | ..	..	..	1860
Bojura One fixed light	31 35. 51 38.	On the point .....	.. | ..	..	..	1860
Marca	.....	One fixed light on the cape.....	.. | ..	..	..	1860
Christovao-Pereyra	31 26. 51 24.	One fixed light on the point .....	.. | ..	..	..	1860
Barba Negra	.....	One fixed light on the islet.....	.. | ..	..	..	1860
RIO DE LA PLATA S. JOSE IGNACIO PT. One fixed bright lt.	34 51. 54 40.	Lighthouse 27 miles S.W. of Cape Santa Maria	2a	103	15	1877
CAPE SANTA MARIA One br. rev. lt. 1 m.	34 40.5 54 9.	A round tower of masonry, 125 ft. high.....	1b	132	18	1874
MALDONADO BAY One fixed bright lt.	34 58.2 54 57.4	Banda Oriental.] Tower, 90 ft. high, on East point. (Intended to be shifted to Lobos Island)	a	152	10	1860
FLORES ISLAND One rev. br. lt., 1 m.	34 56.9 55 52.4	Banda Oriental.] White tower, 65 ft. high. (Bad Light) .....	.. | ..	104 | 12		1833
Lobos Island <i>Proposed</i>	35 1.4 54 50.4	Proposed to be reinstated; removed from Maldonado light.....	.. | ..	..	..	....
English Bank Lt.-Ves. One fixed bright lt.	35 6. 55 52.6	Banda Oriental.] Painted red, with three masts. In 7 fathoms, on tail of the North part of the bank. Position uncertain.....	.. | ..	10		1857

Name and Character of Light.	Lat. S. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
RIO DE LA PLATA—(continued).						
PUNTA BRAVA	34 55.7	White lt.-ho. 1 cable within the point, 2 miles East of Monte Video ..	..	69	10	1876
One fixed bright lt.	56 9.0					
MONTE VIDEO	34 53.0	1. Banda Oriental.] Brown tower, 25 ft. high, on summit of the mount, W. side of harbour. Flash every 3 minutes ..	..	486	25	1852
1. One fix. & flash lt.	56 14.9	2. Clock face on cathedral S. tower. Lighted in order to enable vessels to anchor by cross bearings at night ..	..	147	..	1864
2. One fix. bright lt.						
Panela Shoal Lt.-Ves.	34 54.7	A cable's length N.N.W. $\frac{1}{2}$ W. from the Pancla Reef ..	..	17	5	1866
One bright fixed lt.	56 26.2					
Ortiz Bank Lightvessel	.....	Buenos Ayrean.] Painted red, two masts, red ball at main. Moored in 3 $\frac{1}{2}$ fms., 11 miles N.E. from Indio Point. Red and white flag when pilots are on board. The position of this vessel is not to be relied on ..	●	30	10	1849 1857
One fixed bright lt.						
Chico Bank Lightvessel	34 45.8	Banda Oriental.] Painted red, two masts. In 5 fathoms, 11 $\frac{1}{2}$ miles N.E. $\frac{1}{2}$ N. from Atalaia Point ..	..	20	9	1867
One fixed bright lt.	57 30.2					
COLONIA	34 28.2	(Banda Oriental.) 1. Brick tower, on S.W. angle of Plaza ..	..	110	10	1855
1. One rev. br. lt. 3 m.	57 49.7	2. Pilot-station S.S.W. 6 miles from Farallon Islet. Blue flag with white square during day ..	..	..	..	1877
2. One fixed red lt.						
Farallon Island	.....	Shown from lighthouse, 98 ft. high ..	..	..	12	1876
One fixed bright lt.						
BUENOS AYRES	34 35.5	1. From Guardship, in 2 $\frac{1}{2}$ fms., in outer Roads. Three masts ..	..	20	7	1857
1. One fix. bright lt.	58 16.3	2. On Custom-house tower ..				
2. One fix. bright lt.						
Martin Garcia	.....	.....	..	..	..	....
One bright fixed lt.						
CAPE VIRGINS	52 18.6	Proposed light ..	..	..	..	....
	68 17.5					
FALKLAND ISLANDS	51 40.7	(British.) Tower, 60 ft. high, white and red bands, on Cape Pembroke. Shown seaward from N.W. $\frac{1}{2}$ N. to S.W. $\frac{1}{2}$ W.	●	110	14	1856
One fixed bright light	57 41.8					
PATAGONIA.						
MAGELLAN STRAIT						
Sandy Point	53 9.7	The lts. were shown as follows:—A br. fix. lt. from round tower of block-house, betw. S. by E. $\frac{1}{2}$ E., through E., to N. 30° E., & a fix. red lt. from white cupola, 20 ft. W. of battery flagstaff. Br. lt. bearing N. of W. $\frac{1}{2}$ N. clears shoals to northward. Anchor with red & br. lts. in line, in from 10 to 5 fms. (The block-house was destroyed by fire in Nov. 1877, & the red lt. only is now shown). Green lt. on mole-head ..	..	74	10	1868
One fixed bright lt.	70 53.6		..	69	3	1877
One fixed red light						

Name and Character of Light.	Lat. S. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CHILE.						
CHILOE ISLAND	41 46.7	White tower, 32 ft. high, on N. pt., San Carlos de Ancud, or Punta Corona. Flash ev. 2 min.	4c	197	12	1859
One fix. & flash. br. lt.	73 52.5	From telegraph on upper part of Aguy Point, Ancud, Chili. Guide to anchorage.....	..	..	2	1874
GALERA POINT	40 1.5	White tower of brick, 62 ft. high. Lt. shows a flash every minute	2c	180	20	1876
One fix. & flash. br. lt.	73 44.2					
VALDIVIA	39 52.2	White wooden tower, 8 ft. high; on Castle Niebla Point, on E. side, within entrance ...	4a	121	12	1866
One fix. lt.	73 23.7					
CONCEPCION BAY	36 36.3	White tower, 36 ft. high, on N. point of Quirquina Island, at Talcahuano	4b	213	15	1869
One br. rev. lt. 40 secs	73 2.8					
VALPARAISO	33 1.5	White tower, 61 ft. high, on Angeles, or Playa Ancha Pt. Flash ev. 2 min. Obscured by land southward of S.W. A coloured flashing lt. is also shown at the landing-place ...	4d	190	16	1857
One fix. & flash. br. lt.	71 38.5					
COQUIMBO	29 56.9	1. White tower, 25 ft. high, on Tortuga Point, S. point of Coquimbo Bay. Shown seaward from S.W. by W. $\frac{1}{2}$ W. to N.E. $\frac{1}{2}$ E.....	4c	106	12	1868
1. One br. fl. lt., 20 s.	71 20.7	2. Shown from iron column, on Custom-house mole, as a guide for landing				
2. Rev. red & yellow lt.						
Huasca	28 28.	A fixed light is shown when the mail steamer is expected .....	..	..	..	....
	71 19.					
PORT CALDERA	27 3.	White tower, 42 ft. high. Fix. lt., with a flash every 80 secs., on W. entr. pt. Lt. at pier-head for steamers coaling	4c	123	15	1868
One fixed and flash. lt.	70 53.					
PERU.						
IQUIQUE	.....	A lt.-ho. is building, of iron, 72 ft. high, on Iquique Id. The lt. will be a fixed & flashing light every 30 secs.....	..	..	18	....
CALLAO	12 4.	Octagonal white tower, 60 ft. high, on North point of Lorenzo Island. Shown seaward, but hidden by the island from N.W. $\frac{3}{4}$ N. to W. by N. $\frac{1}{2}$ N.....	..	980	12	1857
One fixed bright light	77 16.5					
GUAYAQUIL RIVER						
AMORTAJADA ID.	3 10.7	White tower on summit of Amortajada, or Clara Island. Flashes every $\frac{1}{2}$ minute	3c	256	24	1873
One br. fix. & flash. lt.	80 24.5					
Arena Point	3 1.9	Square tower on S. side of Puna Island, at entrance of Guayaquil River. Lt. visible 16 secs., obscured 44 secs. in each minute	4a	59	12	1873
One red revolving lt.	80 15.6					
Espanola Point	2 47.5	On summit of Espanola Point, Puna Island...	..	131	9	1874
One fixed bright lt.	79 54.5					
Point Mandinga	2 44.5	On Point Mandinga, E. end of Puna Island, and $\frac{1}{2}$ mile East of the town of Puna.....	..	108	10	1873
One bright fixed lt.	79 52.8					
Manta Bay	0 56.7	At North end of the village .....	..	..	9	1873
One bright fixed light	80 43.					
ECUADOR.						
Esmeralda River	Lat. N.	Coquito Point light discontinued, pending removal to Mount Coquito (1875).....	..	..	..	....
					
COSTA RICA.						
Panama	8 57.	1. On the railway wharf .....	..	..	..	1870
1. One red fixed light	79 31.	2. On the Custom-house, St. José.....	..	..	7	....
2. One fixed light						
Nicoya Gulf	9 58.6	Punta Arenas	3a	65	10	1854
One fixed bright light	84 45.8					
PORT REALEJO	12 27.9	White lt.-house, 33 ft. high, on Cardon Head, N.E. pt. of Cardon Island. Centre of channel is $\frac{1}{2}$ a cable N. of lighthouse.....	..	64	13	1876
One fixed bright light	87 7.8					
Port La Union	.....	Gulf of Fonseca. At inner part of landing wharf.....	..	33	8	1876
One fixed bright light						
Libertad	13 30.7	On W. corner of Custom-house; hidden by a building from S. by E. to S.S.E. $\frac{1}{2}$ E. ....	..	..	6	1872
One fixed bright light	89 15.5					
Acajutla	13 36.7	At end of iron mole at Acajutla, or Sonsonate Roads. Lt. shows white over anchorage, red to southward, and green to northward .....	..	..	7	1872
One fixed light	89 43.7					

Name and Character of Light.	Lat. N. Long. W.	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.
CALIFORNIA (United States).						
SAN DIEGO	32 40.2	Dark grey tower, 45 ft. high, near Point	3a	492	20	1855
One fixed bright lt.	117 14.4	Loma, W. side of entrance.....				
Point Firmin	33 42.	Sq. buff col. tower, 60 ft. high. Flashes alter-	4b	151	19	1874
One flash. red & br. lt.	118 18.	nately red and bright, at intervals of 10 secs.				
Santa Barbara	34 23.6	Gray tower, 44 ft. high, on bluff, 2 miles S.W.	4a	180	12	1856
One fixed bright light	119 43.1	of landing-place				
Hueneme Point	34 9.	In Sta. Barbara Channel. Tower, buff colour,	4c	50	12	1874
One fixed & flashing	119 13.	54 ft. high. Fixed lt. 1 min., then 6 flashes				
bright light		in next minute				
POINT CONCEPCION	34 26.8	White tower, 50 ft. high, near the pitch of the	1b	250	23	1855
One rev. br. lt., $\frac{1}{2}$ min.	120 28.5	point. Steam Fog-whistle 8 secs. in ev. min.				
PIEDRAS BLANCAS	35 40.	Conical brick tower, 105 ft. high, painted white.	1c	168	19	1875
One fix. & flash. br. lt.	121 16.	Lt. shows a flash ev. 15 secs. Piedra Blanca				
MONTEREY	36 38.	rock bears S.W. from the light.....	3a	91	13	1854
One fixed bright light	121 55.	White tower, 45 ft. high, on S. side of Point				
Santa Cruz	36 57.	Pinos	5a	67	14	1870
One bright fixed light	122 0.5	Tower, 50 ft. high, on Point Sta. Cruz, at en-				
Año Nuevo Point	37 6.7	trance of harbour. Coming from N. is not	..	..	..	1872
	122 19.9	seen till it bears E. $\frac{1}{2}$ N.				
PIGEON POINT	37 11.	On S.W. side of the island. A fog-whistle is				
One fl. br. lt. ev. 10 s.	122 23.6	sounded 15 secs. in every minute	1c	150	18	1871
FARALLON	37 41.8	White tower, 100 ft. high, with red-topped lan-				
One rev. br. lt., 1 min.	123 0.	tern. A fog-whistle sounded twice in every	1b	360	26	1855
SAN FRANCISCO		minute, at intervals of 7 and 45 secs. About				
BONITA POINT	37 48.8	25 miles to the northward a steam fog-signal				
One fixed bright lt.	122 30.8	is established on Montara Point.....				
Lobos Point	37 46.9	White tower, 44 ft. high, on summit of S.E.	2a	138	18	1855
<i>Proposed</i>	122 29.5	islet				1877
Fort, South Point	37 48.5	New lt.-tower, $\frac{1}{2}$ mile nearer point, 22 ft. high,	2d	..	..	....
One fix. lt., red flash.	122 28.6	painted white. Old lt.-tower white, as day	5a	83	16	1855
Alcatraz Island	37 49.6	beacon. Fog-trumpet, 270 ft. N.E. of new				
One fixed bright lt.	122 24.4	tower; blast of 4 secs. in ev. 80 secs. Whistle-				
Yerba Buena Island	37 48.3	buoy in 15 $\frac{1}{2}$ fms. S.W. $\frac{7}{8}$ miles from lt.-bo.				
One fixed bright lt.	122 21.7	Proposed flashing light on S. point of entrance				
San Pablo Point	37 57.8	White tower, 27 ft. high, on N.W. bastion. Lt.	3a	166	14	1854
One br. flash. lt. 30 s.	122 2.5	br. 1 min., followed by 4 red flashes during				
Mare Island	38 44.	next minute. Fog-bell every 10 seconds ...				
One bright fixed lt.	122 14.3	White iron tower, 50 ft. high. Fog-bell.				
POINT REYES	37 59.7	Light-brown lt.-ho., 21 ft. high, on S.E. end of	1c	93	15	1875
One br. flash. lt., 5 secs.	123 0.2	Id. Steam fog-whistle 4 secs. ev. 16 secs....				
POINT ARENA	38 57.	Tower, 47 ft. high, on W. end of Brother Id.,	4b	58	14	1874
One bright fixed light	123 45.	San Pablo Strait. Steam fog-whistle $\frac{1}{2}$ min.				
CAPE MENDOCINO	40 26.3	On S.E. end of island, entrance of Marquines	4a	72	14	1873
One bright flashing lt.	124 24.2	Strait. Fog-bell.....				
Humboldt Harbour	40 46.	White iron tower, 52 ft. high, on steep slope	1c	271	23	1873
One fixed bright light	124 13.	of bluff. A sparkling light. Steam fog-				
		whistle, one blast every minute	1a	155	21	1870
		White brick tower, 115 ft. high, near the ex-				
		trmity of the point. Steam Fog-whistle				
		White iron tower, 20 ft. high, on W. extreme.	1c	423	27	1868
		Flash every 30 secs.				
		White tower, 45 ft. high, on N. side of entrance.	4a	53	13	1856
		Steam fog-whistle. Whistle-buoy in 15 fms.				
		outside outer bar, W. $\frac{1}{2}$ S. from lighthouse...				

Name and Character of Light.	Lat. N. Long. W. ° ' "	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established
Trinidad Head One fix. & red flash. lt.	41 3. 124 9.	A brick tower, 34 ft. high, on the head. Fixed bright lt. with red flash of 5 secs. ev. min.	4c	195	17	1871
Crescent City One fixed & flash. br. lt.	41 44.6 124 11.4	Stone tower, 56 ft. high, on outer end of island, which forms the S. and W. sides of the harbour. Flash every 1½ minute	4c	80	14	1856
CAPE BLANCO One bright fixed light	42 50.1 124 32.5	White brick tower, 65 ft. high, 200 yds. from extreme of cape	1a	255	22	1870
CAPE GREGORY, or Point Arago One fixed & flash. lt.	43 20.6 124 22.3	White iron tower, 36 ft. high, on a small island at W. extreme. Flash every 2 min.	4c	75	15	1860
CAPE FOULWEATHER One bright fixed light	44 45. 124 5.	White brick tower on the cape	1a	147	18	1873
COLUMBIA RIVER						
Adams Point One flashing light	46 12. 123 58.	Square wooden buff coloured tower, 57 ft. high, on S. side of mouth of Columbia River. Flashes alternately red and bright, at intervals of 10 secs. Steam fog-whistle	4b	95	15	1875
Cape Hancock One fixed bright lt.	46 16.5 124 3.2	White tower, 50 ft. high, on slope of cape, N. side of entr. of Columbia River. Fog-bell ev. 10 secs. Whistle-buoy in 1¼ fms. S. by E. ¾ E., 7½ miles from lighthouse	1a	230	22	1856
St. Helen's Bar Two fixed red lights	.....	Range lts. for newly dredged channel over St. Helen's Bar. Shown from tripods near town of St. Helen's. Front tripod 20 ft. high, rear 40 ft.	..	..	..	1877
SHOALWATER BAY One br. fix. & flash. lt.	46 44.2 124 4.4	White tower, 50 ft. high, on Toke Point, N. extreme of the bay. Flash every 2 min.	4c	80	14	1856
CAPE FLATTERY One fixed bright light	48 23.3 124 43.8	Juan de Fuca Strait. White tower, 80 feet high, on Tatoosh Island, ¼ mile N.W. of cape. Steam Fog-whistle	1a	162	20	1857
Ediz Hook, or False Ness One bright fixed light	48 8.7 123 23.7	Square white building, 50 ft. high, on the Hook, Port Angeles	5a	42	11	1866
NEW DUNGENESS One fixed bright light	48 11.7 123 7.5	Juan de Fuca Strait. Tower, 104 ft. high, upper half black, lower white, on N. end of sand spit. Fog-whistle twice a minute	3a	100	14	1857
BLUNT, or SMITH ID. One rev. br. lt., ¼ min.	48 19.2 122 50.8	Juan de Fuca Strait. White tower, 48 feet high, on highest part of island	4b	90	15	1858
Admiralty Head One fixed bright light	48 9.4 122 40.1	Square white building, 55 ft. high, on Red Bluff, Whidbey Island, at entrance of Admiralty Inlet	4a	119	17	1861
BRITISH COLUMBIA.						
VANCOUVER ISLAND						
CAPE BEALE One br. rev. lt., ¼ m	48 47.5 125 12.8	Tower, 45 ft. high, on Cape Beale, S.E. entr. to Barclay Sound, Vancouver Island	..	164	19	1874
RACE ISLANDS One flash. br. lt. 10s.	48 17.5 123 32.2	Stone tower, with five black and white bands, on the rocks. A 5-ft. reef lies 3 or 4 cables to S.E. by E. Fog Bell	2c	..	..	1861
Victoria Harbour One fixed blue light	48 25.3 123 24.	White tower, 30 ft. high, on Buenos Island, W. side of entrance	..	44	6	1876
Esquimalt One fix. red or br. lt.	48 25.6 123 27.2	White iron tower, 57 ft. high, on Fisgard Id., S. point. Lt. shows br. from S. ¼ E. to S.E. by E. ¼ E.; thence red to N. ¼ W.; thence br. to N.W. ¼ W.; the rest masked	4a	65	..	1860
FRASER RIVER LT.-V. One bright fixed light	49 3.5 123 17.3	Painted red. In 10 fms. 5¼ miles S. by W. ¾ W. from Garry Point. Two masts; red ball at main. Fog Bell	●	54	11	1866
Nanaimo Harbour One fixed bright light	49 12.8 123 48.7	White tower, 50 ft. high, on entrance island, S. point of entrance	●	65	14	1876
Atkinson Point Rev. br. lt. ev. min.	49 19.7 123 16.	Wooden tower, 55 ft. high, on N. side of entr. to Burrard Inlet. Do not bring it to bear W. of N. to clear Sturgeon Bank off Fraser Riv.	●	119	14	1875

Name and Character of Light.	Lat. N. Long. W. ° °	Description, &c. (Bearings by compass from the light.)	Description of Apparatus	Height above H. W.	Visible in Miles.	Year established.

PACIFIC OCEAN.

HAWAII, or SANDWICH ISLANDS

Hilo Harbour	19 45.5	On Pankaa Point, Hawaii Island. Uncertain light. Small red light shown on pier.....	..	136	10	1869
One bright fixed lt.	155 5.					
Kawaihae	20 3.	Anchorage with light bearing E.N.E. Hawaii Island .....	..	50	10	1869
One bright fixed lt.	155 45.					
Kealahakua	19 28.	Hawaii Island. On Cook Point.....	..	50	..	....
One fixed bright lt.	155 55.					

Maui or Mowee Island	20 52.	Port Lahaina (Lahainaluna) .....	..	..	6	1868
One bright fixed lt.	156 35.					

HONOLULU	21 18.1	1. Inner edge of W. reef. Shown to South from West to S.E. by E.	4a	26	9	1869
1. One br. fixed lt.	157 51.1	2. Near custom-house. To enter, bring the two lights in one. Oahu Island .....	..	28	5	1869
2. One green light						

SOCIETY ISLANDS

TAHITI	Lat. S.	New lighthouse. A square white tower, 75 feet high, on Point Venus. Light shown seaward from W. by N. to N.E. by E. $\frac{1}{2}$ E.	3a	82	15	1856
	17 29.8					
One bright fixed lt.	149 29.3					1868
Papiete	.....	One on the corner of L'Embuscade Battery; the other on a hill-side, 1,520 yds. to S.S.E. In one, lead through channel. (Uncertain.) A small red beacon lt. is shown on Soatoai Reef .....	..	..	..	....
Two red lights						

FIJI ISLANDS

Ovalau Island, Levuka	Long. E.	Two white beacons, E. $\frac{1}{2}$ N. and W. $\frac{1}{2}$ S., 73 yds. apart, each with a red diamond. Inner one on a hill behind the town; the lower one near the Mission-house. In one, they lead through the South entrance passage .....	..	..	10	1871
	17 40.8					
Two fix. beacon lts.	178 49.				4	
Upper bright, lower red light						

NEW CALEDONIA.

PORT DE FRANCE, or NOUMEA	22 28.7	Round iron tower, 157 ft. high, red and white bands, on Amédée Islet, 2 miles within the edge of the reef of the Boulari Passage, New Caledonia	1a	164	20	1866
One bright fixed light	166 27.1					

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LAURIE'S
CATALOGUE
OF
CHARTS
AND
NAUTICAL WORKS.

1879



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